

Uncovering Relationships between Sustainable Business Practice Bundles, Organizational
Culture, and Performance

by

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ABSTRACT

Corporations work to reduce their negative impacts on the environment and society by adopting Sustainable business (SB) practices. Businesses create competitive advantages via practices such as waste minimization, green product design, compliance with regulations, and stakeholder relations. Normative models indicate that businesses should adopt similar sustainability practices, however, contingency theory suggests that effectiveness of practices depends on the context of the business. The literature highlights the importance of organizational culture as a moderating variable between SB practices and outcomes, however this link has not been empirically examined. This thesis presents the development and testing of a theoretical model, using configuration theory, that links SB practices, organizational culture, and financial performance.

Published frameworks were utilized to identify SB practices in use, and the Competing Values Framework (CVF) to identify dimensions of culture. Data from 1021 Corporate Sustainability Reports from 212 companies worldwide was collected for computerized text analysis, which provided a measure of the occurrence of a specific SB practice and the four dimensions of the CVF. Hypotheses were analyzed using cluster, crosstab, and t-test statistical methods.

The findings contribute significant insights to the Business and Sustainability field. Firstly, clustering of SB practice bundles identified organizations at various levels of SB practice awareness. The spectrum runs from a compliance level of awareness, to a set of organizations aware of the importance of culture change for sustainability. Top performing clusters demonstrated different priorities with regards to SB practices; these were in many cases, related to contextual factors, such as location or sector. This implies that these organizations

undertook varying sustainability strategies, but all arrived at some successful level of sustainability. Another key finding was the association between the highest performing SB practice clusters and a culture dominated by Adhocracy values, corroborating theories presented in the literature, but were not empirically tested before.

The results of this research offer insights into the use of text analysis to study SB practices and organizational culture. Further, this study presents a novel attempt at empirically testing the relationship between SB practices and culture, and tying this to financial performance. The goal is that this work serves as an initial step in redefining the way in which businesses adopt SB practices. A transformation of SB practice adoption will lead to major improvements in sustainability strategies, and subsequently drive change for improved corporate sustainability.

DEDICATION

“Doubt thou the stars are fire,
Doubt that the sun doth move.
Doubt truth to be a liar,
But never doubt I love.”

-William Shakespeare, Hamlet –

Dedicated to my muses: Leila, Darian & Sasan.

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TABLE OF CONTENTS

CHAPTER	Page
1. INTRODUCTION.....	1
1.1 The Problem.....	1
1.2. Gaps.....	3
1.3. Research Questions	4
1.4. Methods & Analysis	5
1.5. Contribution	5
1.6 Overview of the study.....	6
2. LITERATURE REVIEW.....	7
2.1. What is sustainability?	7
2.1.1 General Definition.....	7
2.1.2 Sustainability principles.....	9
2.1.3 Sustainable consumption and production.....	10
2.1.4 Corporate Sustainability.....	12
2.1.5 Categories of Sustainability Implementation.....	14
2.2. Why do businesses pursue sustainability?	16
2.2.1 Theoretical Reasons.....	16
2.3. Empirical Reasons	17
2.4. How do businesses pursue sustainability?.....	18
2.4.1 Sustainable business practices.....	18
2.4.2 Sustainable business practices and organizational performance	20
2.4.3 Configurations of Practices	20

CHAPTER	Page
2.4.4 Practices and organizational context.....	22
2.5. Culture as a medium for sustainability	24
2.5.1 Organizational culture and sustainability	24
2.5.2 What is organizational culture?	26
2.5.3 Contingency Theory and Sustainability Performance	29
2.6. Gaps in the literature and Contribution	30
3. HYPOTHESES	33
3.1. Sustainable Business (SB) Practices	33
3.2. Culture and SB practices.....	39
3.2.1. The Competing Values Framework.....	40
3.2.1.1. Clan.....	41
3.2.1.2. Adhocracy.....	42
3.2.1.3. Hierarchy.....	44
3.2.1.4. Market	45
3.3. Contingency Theory and Organizational Performance	46
4. RESEARCH DESIGN	48
4.1. Introduction.....	48
4.2. The Method	49
4.3. Measuring Culture: The Competing Values Framework.....	50
4.3.1 Limitations of using CSR to measure culture.....	52
4.4. The Sample	53

CHAPTER	Page
4.4.1. Data Sources	53
4.5. Collecting and Organizing the Data	56
4.6. Coding	57
4.6.1 Computerized Text Analysis	57
4.6.2 Developing SB practice codes	58
4.6.3. Organizational Culture Codes.....	59
4.7. Content Analysis	61
4.7.1 Financial performance.....	61
4.8 Statistical Analysis	62
4.9 Control Variables	63
5. RESULTS	64
5.1. Introduction.....	64
5.2. RQ1. What clusters or bundles of SB practices are currently used by businesses?.....	65
5.3. RQ2 - Which sustainable business(SB) practice bundles are associated with certain organizational cultural profiles?	77
5.3.1 Organizational Culture	79
5.3.2 Culture and Practice Clusters	86
5.3.3 Review of hypotheses.....	92
5.4. RQ3. If organizational culture and SB practices are aligned, will this result in higher financial performance?	97
6. DISCUSSION.....	100

CHAPTER	Page
6.1. Review of the Findings	100
6.1.1 SB Practice Clusters.....	100
6.1.2 Organizational Culture and SB Practice Cluster Associations.....	104
6.1.3 SB Practice and Culture Cluster Alignment and Financial Performance.....	106
6.2 Limitations & Further Research	107
6.3 Contributions.....	111
6.4 Conclusions	113
REFERENCES.....	115
 APPENDIX	
A: TABLE 2.1 SUSTAINABILITY PRINCIPLES.....	128
B: TABLE 2.2: SUSTAINABILITY IMPLEMENTATION LEVELS	130
C: TABLE 2.3 SUSTAINABLE BUSINESS PRACTICES.....	132
D: TABLE 5.2: INDEPENDENT SAMPLES T-TEST ON PRACTICE CLUSTERS	135
E: TABLE 5.3: MEANS OF SB PRACTICE CLUSTERS.....	143
F: TABLE 5.4: CONTROL VARIABLES.....	146
G: TABLE 5.5: CROSSTABS PRACTICE CLUSTERS/CONTROL VARIABLES....	149
H: TABLE 5.6: INDEPENDENT SAMPLES T-TEST ON CULTURE CLUSTERS.	151

1. INTRODUCTION

“I have learnt that if you want to make a global impact, you cannot ignore business. I don’t mean corporate responsibility programs, but business models that provoke social change.”

- *Pierre Omidyar (Elkington & Hartigan, 2008)*

1.1 The Problem

The supply of energy and material resources needed for industrial growth is expected to rise to 170% of the Earth’s bio-capacity by 2040 (WBCSD, 2008). The scale of demand for goods and services suggests a critical role for business in sustainability and underlines the need for corporations to pursue sustainability practices (Crane, A. , 2000; Sharma & Starik, 2003). Corporations have a far-reaching impact on the world, through their dissemination of products and services, their employees, and the effects of their activities on society and the environment. They have a great influence on the three spheres of sustainability, society, environment, and economy, and thus have the potential to contribute substantially to global sustainability.

Sustainability is “explicitly value-laden and normative, posing the question of how our society *ought* to be developed in a way that balances socio-economic activities and environmental capacities in the long term and from local to global levels” (Wiek, 2010a, p. 10). Values are principles adopted as a guide in one’s life, and they play a crucial role in sustainability attitudes and behaviors (Hansla, Gamble, Juliusson, & Gärling, 2008). Research has provided evidence that links environmentally responsible behavior to an individuals’ personal or moral norms (Thøgersen, 2006). Particular value orientations have been found to have positive correlations with sustainability behavior; these orientations include universalism and benevolence

(Schwartz, 1992). Values characteristic of these orientations include social justice, equality, peace on earth, loyalty, forgiving-ness, and responsibility (Hansla et al., 2008).

Organizational values are a subset of organizational culture, which in turn is one of the most influential concepts in business. Organizational culture impacts organizational, group, and individual values, attitudes, and behavior (Linnenluecke, M. & Griffiths, A., 2010; Ostroff, Kinicki , & Tamkins, 2003). Organizational culture consists of collective values, beliefs, and assumptions that are shared among members, and it exists at multiple levels (Hartnell, C. A., Ou, A. Y., & Kinicki, A., 2011). It can be defined as “the pattern of basic assumptions which a given group has invented, discovered or developed in learning to cope with its problems of external adaptation and internal integration, which have worked well enough to be considered valid, and therefore to be taught to new members as the correct way to perceive, think and feel in relation to those problems” (Schein, 1984, p. 3).

Many researchers argue that to address pressing social and environmental issues, businesses will need to undergo significant culture changes to embrace new environmentally responsible values, beliefs, and behaviors (Fineman, 1997; Harris & Crane, 2002; Russell, Sally V. & McIntosh, Malcolm, 2011; Shrivastava, 1995; Stead & Stead, 1994). This culture for sustainability should foster a broader engagement with social and environmental issues, in which various initiatives gradually facilitate a change in direction and attitude in line with sustainability principles (Marlow, Moglia, Beale, & Stenstromer, 2012). Researchers agree that most corporate sustainability endeavors are superficial technical fixes, focused on changing only the top levels of organizational culture, and are insufficient to achieve sustainability (Hart,

Milstein, & Caggiano, 2003; Senge, P. M. & Carstedt, C., 2001). Real change for sustainability should change values, beliefs, and underlying assumptions.

1.2. Gaps

Corporate sustainability has received much attention in business-and-environment studies. Researchers have made broad recommendations about how a corporation can implement organizational culture change to promote sustainability, but the recommendations have been generic prescriptions for culture change (Linnenluecke, M. & Griffiths, A., 2010). There is a dearth of theoretical underpinning to define sustainability-oriented organizational culture in specific terms (Linnenluecke, M. & Griffiths, A., 2010). Theory is also insufficient to explain the relationship between organizational culture and corporate sustainability. The few existing descriptions of a sustainable organization have been based on theoretical perceptions rather than on real organizations (Russell, Sally V. & McIntosh, Malcolm, 2011).

One definition of corporate sustainability (aka, a sustainable organization) is “an organization in which sustainability principles are embedded across every aspect of the organization, and cultural assumptions reflect the legitimacy of social and environmental issues for business” (Russell, Sally V. & McIntosh, Malcolm, 2011, p. 404). This definition highlights two key areas where sustainability goals must be embedded. The first area is organizational practices. Sustainability principles should be fundamental building blocks for the development of organizational practices. When they are, the practices are considered to be sustainable business practices. The second area is organizational culture. Change towards sustainability requires change at the deepest levels of organizational culture. Sustainable business practices and organizational culture are the focus areas of this study.

1.3. Research Questions

Sustainable business (SB) practices are “all efforts of a business organization to modify, develop, produce and distribute products or services in such a manner so as to preserve and improve ecological environment for the sake of generations to come” (Kanwa, Kumar, & Priyanka, 2011, p. 1). They include practices such as using renewable energy sources, recycling, and abiding by a business code of ethics. The literature on SB practices identifies seven categories of practice: 1) pollution prevention/waste minimization, 2) environmental impact analysis/environmental reporting, 3) employee attraction, development, and retention, 4) stakeholder engagement, 5) greening the supply chain, 6) innovation and clean technology, and 7) sustainable development. Though some categories overlap, each includes distinct strategies that appeal to businesses at certain stages in their implementation of sustainability. Businesses may choose to implement one or more of these categories of practices; as is the case with most organizational practices, bundles of different categories of practices often achieve more than a single category on its own. This synergy among categories of practices is of key importance in this study.

The study seeks to answer three related questions about SB practices:

1. What clusters or bundles of SB practices are currently used by businesses?
2. Which sustainable business (SB) practice bundles are associated with certain organizational cultural profiles?
3. If organizational culture and SB practices are aligned, will this result in higher financial performance?

Organizational culture has a remarkable influence on many decisions within a business. I propose that organizations choose practices that are suited to their culture, and that the closer the fit between practices and culture, the higher the likelihood that practices will be implemented successfully.

1.4. Methods & Analysis

This research uses company reports as the primary source of data. Content analysis is used to determine the SB practices adopted by the firms, as well as their organizational culture profile. The organizational culture questions are based on the Competing Values Framework (Quinn & Rohrbaugh, 1983). Financial performance data is acquired from the COMPUSTAT and CSR databases.

In Phase One of the study, I use cluster analysis to identify the bundles of SB practices adopted by the businesses in my sample. I will develop a theoretical explanation for these clusters and test it in Phase Two of the study, in which I will use analysis of variance and crosstabs to determine the fit between clusters and organizational culture profiles.

1.5. Contribution

The goal of my research is to contribute to improved corporate sustainability performance by identifying bundles of SB practices that are empirically correlated to a successful performance, and to identify which bundles are best suited to different organizational culture types. The discovery of effective SB practice bundles that are positively related to successful sustainability

implementation is a significant finding in Corporate Sustainability research. Few empirically derived guidelines have been put forward for implementing sustainability within a business. The findings from this study will suggest a path for businesses pursuing sustainability, with actionable items (i.e., practices) that can produce a shift to sustainability.

The link between corporate sustainability and organizational culture has scarcely been examined in the literature, even though most researchers agree that the relationship between the two is an important key to understanding what makes organizations sustainable. My empirical findings about the links between organizational culture and SB practices are an important step towards understanding which organizational culture profiles are most amenable to change towards sustainability.

1.6 Overview of the study

Chapter one provides the introduction and overview of the dissertation. Chapter two consists of a review of the literature. Chapter three outlines testable hypotheses. Chapter four provides the research methodology. Chapter five provides a summary of results. In Chapter six, I discuss the findings, limitations and future research extensions. Chapter seven summarizes the dissertation.

2. LITERATURE REVIEW

This chapter reviews the current literature on Business and Sustainability. I first define sustainability and sustainable business. Then I review the reasons why businesses pursue sustainability, and how they do so. I describe the concept of organizational culture and discuss its relationship to corporate sustainability. Finally, I review some of the gaps in research and describe how this study contributes to filling them.

2.1. What is sustainability?

2.1.1 General Definition

The first mention of sustainability on a global scale was through a historic report called “Our Common Future,” which was published by the World Commission on Environment and Development (WCED), also known as the Brundtland Commission. The Commission coined the term “sustainable development” and defined as “the ability to meet the needs of the present without compromising the ability of future generations to meet their own needs” (Brundtland & WCED, 1987, p. 43). This definition has been widely accepted by governments, businesses, NGO’s and other institutions all over the world (Dyllick & Hockerts, 2002). Before then, sustainability was defined mostly on the principles of resilience, environmental conservation and reduced resource use:

1. A sustainable society is “an enduring one, self-reliant and less vulnerable to external forces” and identifies its basis in harvest regulation, renewable and efficient energy use, soil and water conservation, and a stationary, dispersed population with less affluent

lifestyles (as cited in Brown, Hanson, Liverman, & Merideth, 1987, p. 715; Brown, 1981).

2. Dasmann (1985) defined sustainability as a symbiotic relationship with nature, or development within the constraints of local ecosystems" (as cited in Brown et al., 1987, p. 716), and suggests that the search for sustainable development needs to focus on the ideas of local, ecologically balanced, culturally sensitive eco-development (Brown et al., 1987).

Though a formal definition of sustainability was offered very recently, the concept of sustainability has been around for quite some time. The Iroquois confederacy included this quote in their constitution in the 1600's:

3. "In every deliberation, we must consider the **impact** of our decisions on the seventh generation..."

US presidents Thomas Jefferson and Theodore Roosevelt both talked about the importance resource conservation for the sake of future generations:

4. "The earth belongs to each generation during its course...No **generation** can contract debts greater than may be paid during the course of its own existence." -
Thomas Jefferson (1743 – 1826)

5. "Our duty to the whole, including the unborn generations, bids us restrain an unprincipled present-day minority from wasting the heritage of these unborn generations." President Theodore Roosevelt, 1916

Since the official definition and call to action in 1987, sustainability has been defined in more

anthropocentric terms, with a recognition that people are a central part of ecosystems:

6. A sustainable society is "one that to all intents and purposes can be sustained indefinitely while giving optimum satisfaction to its members"(as cited in Brown et al., 1987, p. 715).
7. Seliger (2007) definition is "sustainability is directed at enhancing human living standards while improving the availability of natural resources and eco systems for future generations" (as cited in Jovane et al., 2008, p. 643).

2.1.2 Sustainability principles

Sustainability principles are described as a set of core sustainability requirements and obligations that should be considered by sustainability-oriented decision-makers (Gibson, 2006). "They concentrate attention on what must be achieved, and what key actions are involved, to move consistently towards greater sustainability"(Gibson, 2006, p. 173). These principles are core criteria or objectives that offer some guidance on how to achieve sustainability. Dyllick and Hockerts (2002) identify three principles of corporate sustainability: to integrate the economic, ecological and social aspects in a triple-bottom line; to integrate the short-term and long-term aspects; to consume the income and not the capital(as cited in Stocchetti, 2012b). Several researchers have composed lists of sustainability principles, though many of the lists contain similar notions. Table 2.1 shows a list of some of these. The Gibson (2006) principles have been derived from over two decades of debate and experimentation, from literature and case experience and are widely used in sustainability literature (Sinclair, Diduck, & Fitzpatrick, 2008) . The Basile, Broman, and Robert (2011); &Robert et al. (2002) ecological principles were derived by placing 'not' in front of the three basic mechanisms by

which natural life sustaining systems can be destroyed. They consider one social sustainability principle - the requirement to meet human needs. These principles are specific to corporate sustainability and are used for this reason. Another set of corporate sustainability principles is the UN Global Compact ten universally accepted principles in the areas of human rights, labor, environment and anti-corruption (United Nations, 2013). In practice these principles may conflict or overlap, so as to ensure that the core criteria are not compromised, trade-off rules must be incorporated (Gibson, 2006).

See APPENDIX A TABLE 2.1: SUSTAINABILITY PRINCIPLES

2.1.3 Sustainable consumption and production

One of the major tenants of the sustainability movement, is the reduction of human impacts on natural systems. Our impacts on the environment have changed two-fold in recent times; with greater extractions of natural resources, and subsequently and increase in the amounts that we dispose of into our biosphere.

Since 1985, global resource consumption has been higher than ecological capacity and by 2050, the bio-capacity of two earths will be necessary to satisfy the need for natural resources (Jovane et al., 2008). The energy and resources needed specifically for industrial growth are expected to rise by 170 percent of the earth's bio-capacity before 2040 (WBCSD, 2008). With such high rates of growth, it is estimated that the world's gross national product will double within the next 20 years. The countries of Brazil, Russia, India, China & South Africa (BRICS nations) saw value advance in their stock markets of 100-300 percent in the last 10 years, and are expected to outrun some of the G8 Nations within the next 20 years (Jovane et al., 2008).

Industrial growth will grow with the economy, which signals the need for sustainable methods of managing this growth. “If the lifestyle of these rapidly advancing nations becomes shaped by the pre- dominant technologies of the first world, then the global resource consumption will exceed every ecologically, economically and socially responsible level”(Jovane et al., 2008, p. 644).

Even with all this wealth, only one tenth of the population achieves half of the world’s global worth. One fifth of the planet has access to four fifths of the global wealth, while half of the population survives on less than \$2 a day, and have little or no access to clean water, electricity or food (Jovane et al., 2008). A further challenge is the inequity in the distribution and access to resources. This presents further inequalities in rights, responsibilities, influence and voting possibilities (Jovane et al., 2008).

The global and grand challenges that we face in this generation cannot be solved without the involvement of the world’s producers (resource consumers) – businesses. It has become widely recognized that corporations, can and should fulfill an important function in lessening their impacts to address these world challenges (Robert et al., 2002). As the dominant global institution, business’ responsibility has expanded beyond just the production of goods and services, it is now being looked upon to solve or support social outcomes as well (Franz, 2012). As businesses grow in size they are held accountable, by various groups for their environmental and social impacts (Franz, 2012). Employees and shareholders expect environmentally and socially responsible actions from their organization, and externally, customers, NGO’s and government place pressure on the business to maintain a sustainability focus (Robert et al., 2002). Businesses can address the current unsustainable production and

consumption issues by reducing resource use, creating products and services with sustainability in mind; providing more equitable access to products/services, particularly for those in the developing world; creating jobs and dignified living conditions.

2.1.4 Corporate Sustainability

Neoclassical economics is the prevailing paradigm today, where the main goal of business is to maximize shareholder value (Cotgrove, 1982; Egri & Pinfield, 1996; Stubbs & Cocklin, 2008). Commonly, organizations do not pursue sustainability strategies unless it is in the organization's interest, i.e. for cost-savings, compliance with legislation, pressure from stakeholders or to enhance the company's image (Bansal & Roth, 2000; Stubbs & Cocklin, 2008). Harvesting resources is favored over preservation for future generations, and waste and pollution are externalized, as they disappear from the company's realm of operations (Shrivastava, 1995; Stubbs & Cocklin, 2008). The production cycles are energy and resource intensive and the entire system is based on utilizing resources as if they were in abundance (McDonough & Braungart, 2002; Stubbs & Cocklin, 2008).

However, businesses today have made strides in achieving some sustainability goals in the last few decades. They have done so to achieve greater efficiencies and cost savings, competitive advantages, and signal to their customers that they are invested in sustainable development. Even with the rise in sustainability research and new developments, it remains difficult for a business to pursue sustainability beyond the 'low hanging fruit' of resource efficiency and reduction, and achieving enhanced reputation through public reporting. The concept of Corporate sustainability is still very much undefined, and is an area of contention.

The definitions that do exist, make some attempt to rectify this issue, but they are still vague descriptions of what a sustainable organization should look like, and offer no specific method of defining or developing a sustainability strategy within an organization (Daily & Huang, 2001; Linnenluecke, M. & Griffiths, S., 2010). One study of top management's perception of corporate sustainability found the following descriptions:

1. a corporation working toward long-term economic performance,
2. a corporation working towards positive outcomes for the natural environment,
3. a corporation that supports people and social outcomes, or
4. a corporation with a holistic approach

(Russell, Haigh, & Griffiths, 2007; as cited in Russell, Sally V. & McIntosh, Malcolm, 2011, p. 395).

Other researchers envision a sustainable organization as “innovative companies and leaders, who set the standard for other businesses” (Roome, 1992b); and “an organization in which sustainability principles are embedded across every aspect of the organization, and cultural assumptions reflect the legitimacy of social and environmental issues for business” (Russell & McIntosh, 2011, p. 404). Sustainable organizations are said to adopt a long-term perspective that is underpinned by principles of social and environmental morality” (Russell, Sally V. & McIntosh, Malcolm, 2011, p. 404) and Sharma (2002) defines sustainable organizations as those “organizations that build on natural capital, enhance human and societal welfare, and contribute to appropriate economic and technological development” (Sharma, 2002, p. 2).

With such broad and ill-defined definitions, new models of businesses have erupted over the years, basing their assumptions not solely on traditional neoclassical economics, but on social

and environmental purposes as well. These new hybrid business models “blur the distinction between nonprofit and for-profit organizations, with emphases on values and missions for the common-good mission and on financial performance” (Boyd, Henning, Reyna, Wang, & Welch, 2009; as seen in Russell, Sally V. & McIntosh, Malcolm, 2011). These organizations contribute to resolving environmental and societal challenges and have been called ‘the closest approximations of the sustainable organization’ (Russell, Sally V. & McIntosh, Malcolm, 2011) They have transformed the focus of business, from just a financial perspective, to one that takes into account the environment and society as well. Some of these businesses include: social enterprise, benefit corporations and environmental enterprise (Billis, 2010). More research is needed to understand how sustainability is embedded into the culture of the business.

2.1.5 Categories of Sustainability Implementation

Firms have been classified according to their level of performance in relation to sustainability issues (Carroll, A. B., 1979; Dias-Sardinha & Reijnders, 2001; Gallagher, nd; Hart, S., 1995; Russell, Sally V. & McIntosh, Malcolm, 2011; Wartick & Cochran, 1985). Various researchers posit different levels, including reactive to sustainable (Carroll, A. B., 1979; Russell, Sally V. & McIntosh, Malcolm, 2011; Wartick & Cochran, 1985); middle-roaders to visionaries (Gallagher, nd); compliance to sustainability (Dias-Sardinha & Reijnders, 2001); pollution prevention to sustainable development (Hart, S. L. , 1995) and more recently pollution prevention to base of pyramid (Hart, 2011).

Table 2.2 shows a summary of some of the levels found in literature.

See APPENDIX B TABLE 2.2 – SUSTAINABILITY IMPLEMENTATION LEVELS

The table above presents different levels of corporate sustainability found in literature. Many of these models present similar stepped approaches to achieving sustainability. At the very base level, authors often describe a concern with compliance, (also called reactive and middle roaders) that is businesses complying with environmental and business regulations to minimize fines. The next level of sustainability implementation is pollution prevention, (also called defensive joined up with the compliance level to be called middle roaders) in which companies reduce or eliminate effluents and emissions by innovative changes in operations or resource substitution (Hart, S., 1995). This saves costs, as end-of-pipe solutions at the compliance level can be costly. At the third level, companies can save even more by reducing resource use. This level is referred to as eco-efficiency (also referred to as ‘efficiency experts’ and ‘accommodative’). At this level, saving money by minimizing waste, resources and energy use, is the main business focus. At one level further, sustainability endeavors are focused on minimizing environmental impact by improving operations, resource and energy use, and the final product. These businesses have moved beyond cost savings and now attain a competitive advantage through their engagement with sustainability issues. This group is called Eco-innovation and/or Eco-ethical (also referred to as proactive). Finally, there is the ‘sustainable’ level (also called visionaries). These businesses have goals beyond minimizing or removing environmental impacts; they focus also on societal impacts, using these impacts as drivers for their organizational activities. Sustainability principles are embedded across the organization and there is a pervading organizational culture for sustainability.

2.2. Why do businesses pursue sustainability?

2.2.1 Theoretical Reasons

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 Linde (1995), known as the 'Porter Hypothesis' and Hart, S. (1995) Natural Resource Based View of the Firm (NRBV).

Porter and 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 & King, 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 & 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 & Linde, 1995). Another means of innovation is by improving resource productivity. This can be through efficient use of particular inputs, better products yields or products (Porter & 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.

Whereas Porter's theory assumes that environmental performance will help businesses to gain a competitive advantage, Hart's NRBV theory looks at how a business can gain a competitive advantage by pursuing sustainability (Berchicci & King, 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 & King, 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 (e.g.,Dias-Sardinha & Reijnders, 2001; Russell, Sally V. & McIntosh, Malcolm, 2011) and will be reviewed later in this chapter.

2.3. Empirical Reasons

With the pressure on businesses by government, NGO's, customers and shareholders, to address their environmental and societal impacts, there have been recent changes in business operations that demonstrate a gradual change to sustainability. In recent years, companies have changed products, processes and policies, adopted environmental standards, and many other ventures, in the name of addressing pollution, reducing resource use, reducing emissions, and improving community relations (Crane, A. , 2000). These changes have come about as a result of the changing demands of consumers, as well as shareholders.

Corporate sustainability has the ability to help solve global issues, but also bring many returns to business, primarily because of the ability to develop competitive advantages through

emerging capabilities such as waste minimization, green product design, reduced fines for environmental regulations; and improved community and stakeholder relations (Crane, A. , 2000; Gladwin, 1992; Hart, 1994; Kleiner, 1991; Schmidheiny, 1992). Several studies have examined the influence of sustainability implementation on financial performance (Gao, 2009; Orlitzky, 2006). The results show that a commitment to social and environmental responsibility lead to improved reputation (Fombrun & Shanley, 1990; as cited in Gao, 2009), high quality employees (Turban & Greening, 1997), strong stakeholder relations (Bansal, 2004; Hillman & Keim, 2001), management skills (Russo, M. V. & Fouts, P. A., 1997; Sharma, S. & Vredenburg, H., 1998), customer loyalty (Gao, 2009; Russo, M. V. & Fouts, P. A., 1997) , increased competitiveness, legitimization and ecological responsibility (Bansal & Roth, 2000).

In this next section, I review the literature on sustainability principles and sustainable business practices, and how these practices are linked to organizational performance.

2.4. How do businesses pursue sustainability?

2.4.1 Sustainable business practices

Sustainable business (SB) practices are actionable pursuits that deliver on one or more of the sustainability principles. One definition of sustainable business practices is “All efforts of a business organization to modify, develop, produce and distribute products or services in such a manner so as to preserve and improve ecological environment for the sake of generations to come” (Kanwa et al., 2011). They are also referred to as green business practices. There is a real need for a deeper understanding of SB practices and the tools used to achieve them.

Garzella and Fiorentino (2013) lists some of the more commonly mentioned practices: energy conservation, renewable energy, pollution abatement, reductions in natural resource consumption, waste reduction, resource recycling, global warming limitations, reductions in the environmental effects of production systems, improvements in the environmental awareness of business, the use of renewable resources, the development of new environmentally friendly products, the use of environmentally advanced technologies and processes, environmental management systems, eco-labeling, energy efficiency and environmental reporting” (Garzella & Fiorentino, 2013).

The literature on SB practices was reviewed to highlight 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. The following table presents a list of SB practices found in the literature, categorized by broader SB practice headings.

See APPENDIX C TABLE 2.3 – SUSTAINABLE BUSINESS PRACTICES

2.4.2 Sustainable business practices and organizational performance

Researchers have empirically demonstrated the link between successful implementation of SB practices and a firm's economic and environmental performance (e.g. Pullman, Maloni, & Carter, 2009; Rao & Holt, 2005; Russo, M. & Fouts, P., 1997; Zhu & Sarkis, 2004). 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 (Hardjono & Van, 2001; Lee, 2012; Stocchetti, 2012b). Sustainability-driven goals also create the opportunity for adoption of new technologies and process analysis e.g. Total Quality Environmental Management (TQEM), 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 (Barthel & Ivanaj, 2006; Chabowsky, Mena, & Gonzales-Padron, 2011; Stocchetti, 2012b).

2.4.3 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

(García-Castro, Aguilera, & Ariño, 2013; Stavrou & Brewster, 2005). 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 & Schulte, 2014). The organizational configuration refers to “any multidimensional constellation of conceptually distinct characteristics that commonly occur together”(Meyer, Tsui, & Hinings, 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, Glick, & Huber, 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 (bundles of practices) can lead to the same organizational outcome – i.e. equifinality (Ostroff & Schulte, 2014). Configurational 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 & 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 & 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.

Shah, R and Ward, P. T (2003) literature search found that lean production systems are “integrated manufacturing systems that require a set of diverse manufacturing practices” (Shah, R & Ward, P. T, 2003; Womack & Jones, 1996). They also found that applying the various practices simultaneously would result in better operational performance because the practices are complementary and interrelated (Shah, R & Ward, P. T, 2003). 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.

2.4.4 Practices and organizational context

Examining business practices and performance without considering organizational context can lead to incorrect conclusions. Shah, Rachna and Ward, Peter T. (2003) suggested that “the

success of implementation of any particular management practice frequently depends upon organizational characteristics, and not all organizations can or should implement the same set of practices.” The relationship between practices and organizational context has been examined by Toh, Morgeson, and Campion (2008), they examined the relationship between HR bundles and organizational values and structure. Their research showed that organizational context could affect the rate at which HR practices are adopted. Toh et al used the Attraction, Selection, Attrition (ASA) framework, and considered the organization’s strategic values and structure, in order to understand the factors that affect the shape of an organization’s HR system. They ascribed to the general systems perspective, and argued that the analysis of HR practices should consider “social, structural and managerial processes” (Toh et al., 2008). At the same time they also suggested that HR system could influence elements of the organizational context (Toh et al., 2008).

Based on the conclusion that management practices are affected by and can affect organizational context, I decided to examine the relationship between organizational culture and the SB practice “bundles” or clusters.

This next section describes organization culture, and the impact that culture might have on sustainability implementation.

2.5. Culture as a medium for sustainability

2.5.1 Organizational culture and sustainability

Many researchers agree that the best measure for corporate sustainability is through the measurement of its organization's culture (Hart & Milstein, 1999; Linnenluecke, M. & Griffiths, S., 2010; Russell, Sally V. & McIntosh, Malcolm, 2011; Senge, P. M. & Carstedt, G., 2001; Shrivastava, 1995). A truly sustainable company should have sustainability principles embedded in all levels of its culture, including its values and underlying assumptions (Jennings & Zandbergen, 1995; Linnenluecke, M. & Griffiths, S., 2010; Marlow et al., 2012; Post & Altman, 1994; Stead & Stead, 1992; Welford, 1995). Several measures have been developed to measure sustainability implementation within an organization. Many of these evaluate what Schein (1990) would consider as "permanent archival manifestations" and fall into the category of artifacts or the observable culture. Artifacts are surface level realizations of underlying values that represent manifestations of deeper assumptions (Ostroff et al., 2003). This category is considered a palpable one but is usually difficult to decipher, which makes it an unreliable indicator of a company's values and culture (Schein, 1990).

Some researchers argue that the recent changes in business in line with sustainability, lead to only superficial changes in the organization, and are discernable only through changes in artifacts (observed culture) (Hart & Milstein, 1999; Linnenluecke, M. & Griffiths, S., 2010; Senge, P. M. & Carstedt, G., 2001). They reason that to achieve true sustainability status, there needs to be significant cultural change and transformation, which implies a broader engagement with social and environmental issues in which various initiatives gradually facilitate a change in direction and attitude in line with sustainability principles. (Jennings &

Zandbergen, 1995; Linnenluecke, M. & Griffiths, S., 2010; Marlow et al., 2012; Post & Altman, 1994; Stead & Stead, 1992; Welford, 1995). “Organizations must go beyond technical fixes and embrace new environmentally responsible values, beliefs, and behaviors”, and organizational culture must be congruent with the sustainability principles in order for organizations to become truly sustainable (Fineman, 1997; Harris & Crane, 2002; Russell, Sally V. & McIntosh, Malcolm, 2011; Shrivastava, 1995; Stead & Stead, 1994).

Businesses may be adept at adopting programs and changing products and policies, but it is an entirely different and grander task to change an organization’s deep-seated values and assumptions. (Crane, Matten, & Spence, 2008; Russell, Sally V. & McIntosh, Malcolm, 2011). Schein (1990) argues that organizational behavior can change only when there are changes in the underlying assumptions of the culture. “In this way, it is inconceivable that an organization can become truly sustainable by relying on neoclassical economic assumptions”(as cited in Russell, Sally V. & McIntosh, Malcolm, 2011; Shrivastava, 1995). The current economic approach is that resource allocation should be left up to the free market, and this will let industry realize its natural comparative advantage. Businesses seek to maximize profit and utility above all else. These assumptions are no longer sustainable in light of dwindling resources, and the pursuit of economic development should be modified to pursue sustainable development goals. This means that business decisions should consider environmental and social factors in addition to economic factors. This involves a significant organizational culture change to one that is based upon sustainability principles (Crane, A., 2000; Jennings & Zandbergen, 1995; Linnenluecke, M. K. & Griffiths, A., 2010; Marlow et al., 2012; Post & Altman, 1994; Russell, Sally V. & McIntosh, Malcolm, 2011; Shrivastava, 1995; Starik & Rands, 1995; Stead & Stead, 1992; Welford, 1995).

2.5.2 What is organizational culture?

The concept of organizational culture emerged in the 1970's and has been controversially discussed with regards to its definition. Many definitions have been suggested. The most comprehensive and frequently cited definition, has been offered by Schein (1990).

“Culture can be defined as a pattern of basic assumptions invented, discovered, or developed by a given group, as it learns to cope with its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore is to be taught to new members as the correct way to perceive, think, and feel in relation to those problems” (Schein, 1990, p. 111).

Other definitions range from “notions of accepted behavioral rules, norms and rituals” (Trice & Beyer, 1984), to “shared values, ideologies and beliefs” (Schwartz & Davis, 1981), and “shared patterns of meaning or understanding” (Linnenluecke, M. & Griffiths, A., 2010; Louis, 1985; Smircich, 1983).

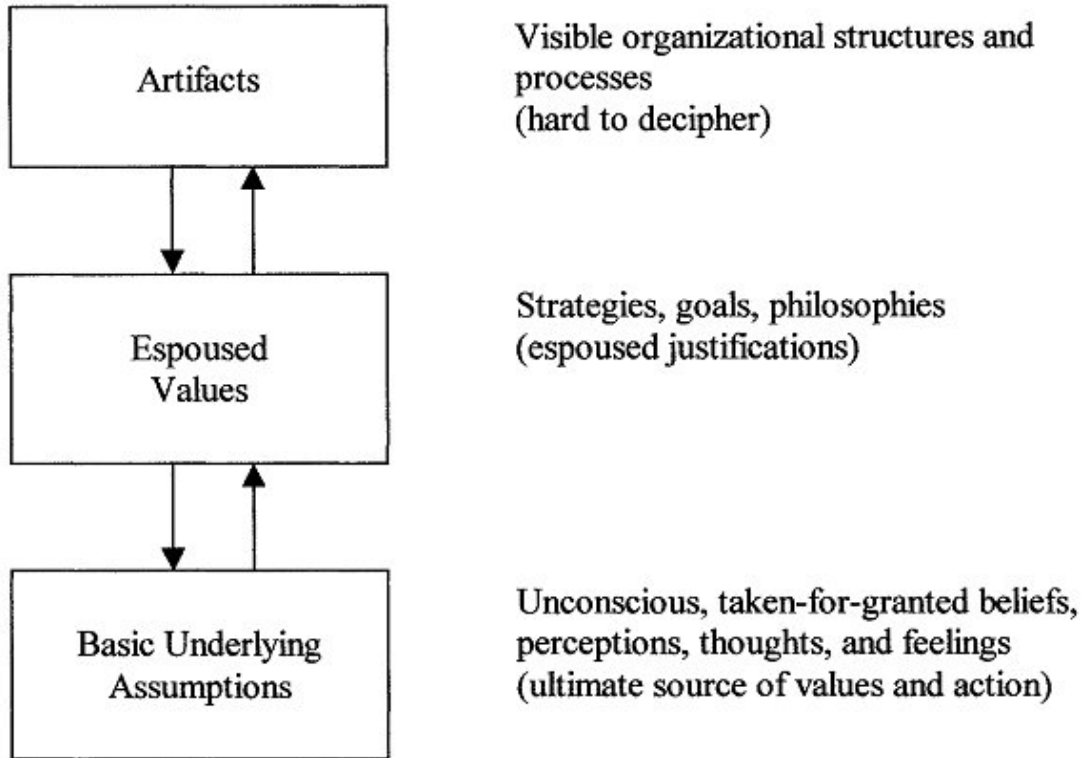
Organizational culture and organizational climate are usually examined simultaneously. Organizational climate's definition has also been contended. (Schneider, Ehrhart, & Macey, 2011). Schneider et al. (2011) discussed the confusions about the definition and the operationalization of climate, and the lack of resolution between organizational climate and culture. One definition refers to climate as employees perceptions of what the organization's practices, procedures, policies and reward behaviors are (Ostroff, Kinicki, & Muhammad, 2013; Schneider et al., 2011). It is the account or description of the experiences of those within

the organization based on what they see, feel and report happening to them in an organizational situation (Ostroff et al., 2013).

Schein (1990) developed a model of organizational culture, proposing three levels at which culture can manifest: (a) observable artifacts, (b) values, and (c) basic underlying assumptions (Schein, 1990). See figure 2.1 below. Artifacts are reflected in the physical appearance of an organization through the building layout, the smell and feel of the place, the dress code; the evident social dynamics such as how employees interact with each other and with customers; and also through archival manifestations such as company reports, records and statements of purpose. (Schein, 1990). This in effect, describes organizational climate. Values are concepts or beliefs that pertain to desirable end-states or behaviors. They transcend situations, guide selection or evaluation of behavior and events, and are ordered by relative importance” (Schwartz, 1992, p. 4). When values become engrained in thoughts and behaviors, they become an underlying assumption. They have become so taken for granted that there is little variation within a social unit (Schein, 2010). They are unobservable and reside at the core of an organization’s culture. (Ostroff et al., 2013)

FIGURE 2.1 SCHEIN'S CULTURE MODEL

SOURCE: (Schein, 1992)



Schein's model has been used widely. Although many researchers have applied ideas directly from Schein (Pedersen & S., 1989), others have challenged his approach (Hatch, 1993). Some researchers disagree that organizational cultures are unitary (Gregory, 1983; Louis, 1983; Martin & Siehl, 1983; Van Maanen & Barley, 1985), some dispute the idea that the function of culture is to maintain social structure, (Meyerson, 1991a; Meyerson, 1991b; Meyerson & Martin, 1987; Van Maanen & Barley, 1985) and others have pursued perspectives that are not found in Schein's model (Hatch, 1993). One such perspective focuses on symbols and

symbolic behavior in organizations (Hatch, 1993). Generally though, Schein's remains "one of the only conceptual models ever offered"(Hatch, 1993).

2.5.3 Contingency Theory and Sustainability Performance

To clarify the interplay between organizational culture and SB practices, I consider how each of the four cultural traits (i.e. involvement, consistency, adaptability and mission) interacts with the others to influence firm performance. Contingency theory provides a lens through which I can examine the interplay between the three variables of SB practices, organizational culture and sustainability performance. The contingency model argues that different combinations are more effective under certain conditions (Guest & Conway, 2004), and this theory is utilized to investigate whether the cultural profile of the firm has any influence on successfully implementing SB practices and achieving positive sustainability performance.

At a basic level, contingency theory proposes that organizations adapt their structure to maintain fit with changing contextual factors, to attain high performance(Sousa & Voss, 2008). Contingency studies generally involve three types of variables:

1. Contextual (or contingency) situational characteristics exogenous to the organization. The ability to control or manipulate these variable is limited, though change is possible in the long term with substantial effort.
2. Response variables – organizational actions taken in response to contingency factors
3. Performance variables – dependent measures that represent specific aspects of effectiveness, that allow us to evaluate the fit between contextual and response variables (Sousa & Voss, 2008).

This research uses the contingency model to explore how SB practices can be used to improve sustainability performance, considering the contingent variable of organizational culture.

2.6. Gaps in the literature and Contribution

Corporate sustainability has been the focus of numerous papers, yet still there are several gaps in the research, owing to the infancy of the topic. Few studies have examined the relationship between organizational culture and corporate sustainability. Linnenluecke, M. K. and Griffiths, A. (2010) and Russell, Sally V. and McIntosh, Malcolm (2011) discussed organizational culture and sustainability, but provided little to no empirically tested conclusions. Both papers conclude that culture plays an important role in the successful implementation of corporate sustainability, and called for further research in this area. But, there is no clear, agreed-upon definition for corporate sustainability. Many researchers have posed the question of what a corporate sustainability culture looks like, and very few have answered it. The consensus is that there are many forms of corporate sustainability, all of which are shaped by organizational culture. Because this has never been empirically tested, this remains an assertion. Few research studies have provided examples of a corporation with a culture for sustainability.

Researchers have used sustainability practices and indicators as proxies. Sustainability principles are broad ideologies that should be met to achieve sustainability, which make them difficult to incorporate into every day operations. Sustainability practices and indicators have typically been used as smaller, measureable items that taken as a group or bundle, can contribute to satisfying the 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 sustainability practices. The literature has discussed on other organizational practices, such as human resource practices, has understood this effect of bundling practices on organizational performance. The researchers agree that practice bundles can simultaneously and synergistically work to create a high-quality system, but this has not been examined with regards to sustainability practice bundles.

Further, existing research on corporate sustainability and organizational culture has attempted to link the two concepts theoretically, by determining which culture types are most likely to be successful in achieving corporate sustainability goals. This has resulted somewhat in the conclusion that there are different avenues to sustainability, and that each culture can form their own version of sustainability based on what their emphasis is. Other research points to specific cultures as more prone to achieving sustainability. Neither of these theories have been empirically tested, but equally concerning is the non-transferable nature of this finding to business operations. Using sustainability practice bundles and tying these to organizational culture is seemingly a more practical approach to addressing corporate sustainability within different cultural profiles.

My research will empirically discover effective sustainability practice bundles, and use organizational culture as a means through which organizations can choose the ones best suited to them. Effectively, I will address most of the above stated gaps in the literature. First, by determining empirically the various bundles or clusters of sustainability practices that are being used by businesses, and linking those to company performance, we can distinguish the bundles in terms of effectiveness and comprehensiveness. This alone is a significant, practical finding, that can be used by organizations to effect sustainable change within their operations.

Secondly, I will use the discovered 'clusters' and determine the cultural profiles that the clusters are best suited to. Businesses most successful in their sustainability implementation are expected to have most or all of the practice categories, but their organizational culture will have some influence on which bundles they place the most emphasis. This second phase of the research will highlight those.

The goal of my research is to improve sustainability performance by identifying bundles that be empirically correlated to better performance and shown to be suited to different culture types.

3. HYPOTHESES

3.1. Sustainable Business (SB) Practices

After examining the existing literature on SB practices, I grouped the list of SB practices into 16 themes or categories. These categories are described below:

An objective within these first categories 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, use of eco-efficient practices, technologies and products/services. 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.

1. Product & Process - design of products and processed to reduce wastes, increase efficiency and enhance end of life and use phases.
2. Energy/Water/Materials - reducing consumption of Energy/Water/Materials

Waste is the most prevalent category, and supposedly, the most basic level of corporate sustainability mentioned in literature (e.g., Hart, 2011; Mittal, Gupta, & Pareek, 2013; Perotti, Zorzini, Cagno, & Micheli, 2012; Sarkis, 1998; Stead, J. G. & Stead, W. E., 2013; Stocchetti, 2012b). 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, S., 1995). 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, S., 1995).

3. Waste and Emissions - reducing product and process wastes and emissions

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, p. 473). 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. (e.g., Mittal et al., 2013, p. 473; Sarkis, 1998).

4. Supply Chain and Logistics – includes practices focusing on raw materials, suppliers, and sourcing issues.

Companies using the following 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). (e.g., Hart, 2011; Sarkis, 1998; Stead, Jean Garner & Stead, W. Edward, 2013; Stocchetti, 2012b) The practices in this category involve integrating the ‘voice of the environment’ (Hart, 2011).

5. Monitoring and Reporting - Public reporting and continuous monitoring of indicators/progress

6. Regulations and Compliance – government or industry regulations

Goal is to adhere to relevant regulations, agreements and general codes of conduct

The following category of practices is not as widely discussed as other categories but appears to be significant in satisfying sustainability principles (e.g., Hart, 2011; Mittal et al., 2013; Stead, Jean Garner & Stead, W. Edward, 2013). 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, J. G. & Stead, W. E., 2013). 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 it’s industries evolve (Hart, 2011).

7. Research & Development/Clean Technology/Buildings - research focused on clean technologies, more sustainable products and building enhancements

The following practices are not widely discussed in the literature, but are also fundamental if a business wants to address all sustainability principles (e.g., Hart, 2011). These categories require 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, S. (1995) suggests that, “a sustainable development strategy means that firms must build markets in the “South” (developing 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, S., 1995; Hart, 2011). 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.

8. Ethics – general codes of good business conducts: focusing on human rights, treatment of minorities and the disadvantaged as well as child labor issues
9. Developing World - focus on 3rd world countries and their development
10. Community Focus and Philanthropy – endeavors to develop the local and/or regional communities as well as philanthropic activities

Organizations have influence over its employees, but also on its customers, its investors, its 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, J. G. & Stead, W. E., 2013). Competitive advantages can be built through stakeholder relationships, reputation, and social capital. These present unique advantages to create value for the business (Stead, J. G. & Stead, W. E., 2013). 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, J. G. & Stead, W. E., 2013). Practices which fall under this category are shareholder democracy, executive compensation, shareholder structure, board independence, customer and product responsibility and social reporting. (e.g., Dos Santos, Svensson, & Padin, 2013; Mittal et al., 2013; Sarkis, 1998; Stead, Jean Garner & Stead, W. Edward, 2013; Stocchetti, 2012b).

11. External and Consumer Orientation - focused on public image and consumer facing material
12. Financial and Risk – focused on shareholder growth, investments and profits

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 and safe, organizations can enhance the personal development of their employees and ultimately their performance in the firm. (Stead, J. G. & Stead, W. E., 2013). Organizations must also develop internal strategies that help build a culture for sustainability.

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.

13. Employees and Recruitment - focus on employee recruitment and development
(e.g., Dos Santos et al., 2013; Mittal et al., 2013; Sarkis, 1998; Stead, Jean Garner & Stead, W. Edward, 2013; Stocchetti, 2012a).
14. Internal Business Strategies - internal strategies developed by top management to cultivate a culture for sustainability
15. Health and Safety - prevention and correction of accidents

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.

16. Environmental Goals - environmental conservation and restoration

These strategies are theoretically derived, and I expect to find organizations that use different combinations of these practices, with the more comprehensive bundles having greater sustainability performance. Thus, I hypothesize that the cluster analysis will result in a hierarchical clustering of organizations based on the types of SB practices adopted.

Hypothesis 1a: *Organizations will belong to a cluster within which the SB practices adopted are similar to other companies inside the cluster versus outside the cluster.*

3.2. Culture and SB practices

An important link between sustainability and culture is the effect that organizational culture can have on sustainability implementation. Linnenluecke, M. K. and Griffiths, A. (2010) examined the link between culture types (using the Competing Values Framework) and the adoption of sustainability principles. They surmised, using theory, that sustainability means different things to different cultures and suggested that culture plays an important role in how sustainability is implemented and outcomes that it achieves. This corroborates findings from Zammuto, R. F., Gifford, B., and Goodman, E. A. (2000b).

Organizational culture can be viewed as a set of accepted behavioral rules, norms, values and

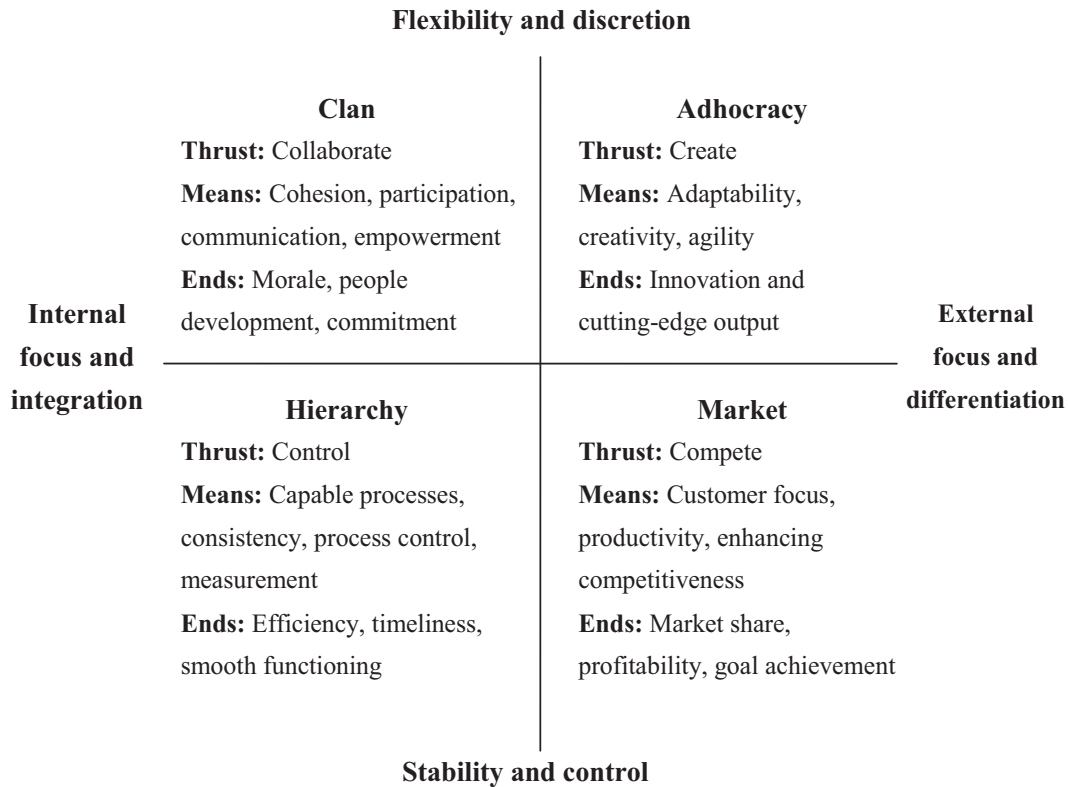
rituals (Trice & Beyer, 1984). These norms and values “can influence and guide the choices, priorities, commitment, attitudes, and behaviors of organization members” (Cable & Judge, 1997; Katz & Kahn, 1978; Schein, 1990; as seen in Toh & Morgeson, 2008). Sustainability is explicitly a value-laden concept (Wiek, 2010b), and implementation of sustainability strategies will be dependent on the values, beliefs and behaviors that exist within the business. This means that the organizational culture has an effect on the sustainability strategies that are adopted and how successful the implementation is.

3.2.1. The Competing Values Framework

We use the Competing Values Framework(CVF) to measure organizational culture. The CVF is one of the most frequently used measures of organizational culture. The CVF identifies the four culture types of Clan, Adhocracy, Hierarchy, and Market. I will discuss the CVF more in Chapter 3. The CVF model depicts organizational culture using two dimensions. The internal-external dimension represents the organizations focus on internal dynamics or on the demands on its external environment (Zammuto, R. F., Gifford, B., & Goodman, E. A., 2000a). The flexibility-control dimension focusses on the organization’s preferences for structure and control (Linnenluecke, Russell, & Griffiths, 2009). The result is the four culture types of Clan, Adhocracy, Hierarchy and Market.

FIGURE 3.1 THE COMPETING VALUES FRAMEWORK

Source: (Linnenluecke et al., 2009)



It is important to note that these culture types are indeed ‘ideals’ and are not intended to box organizations within one culture type. The 4 culture types are not mutually exclusive, and can coexist within a single firm (Quinn, 1988; Quinn & Kimberly, 1984).

3.2.1.1. Clan

The Clan culture type has typically been referred to as “group culture” by several researchers, as it relates to the level of participation in teams (Denison & Spreitzer, 1991; Linnenluecke, M. & Griffiths, A., 2010; Linnenluecke et al., 2009; Parker & Bradley, 2000; Zammuto & Krakower, 1991). Trust and commitment are valued and rewarded and decision making is

usually decentralized and achieved through cooperation (Denison & Spreitzer, 1991; Linnenluecke et al., 2009; Zammuto & Krakower, 1991).

The human-relations ideology by (Barley & Kunda, 1992; Zammuto et al., 2000a) and Closed rational systems models demonstrate the Clan culture to emphasize human factors and internal arrangements of the organization as well as the alignment of conflicting goals. Work conditions, social interaction and group affiliations are all important to this culture type (Zammuto et al., 2000a). Clan organizations place great emphasis on employee development, is a strong promoter of equal opportunity, workplace diversity and work-life balance. A clan organization adopts a strong and clearly defined corporate ethical position on issues such as discrimination, business ethics, and fraud (Linnenluecke et al., 2009). We expect that an organization with a high Clan culture, would have a high focus on Employee Attraction, Development and Retention, as well as ethical practices.

Hypothesis 2a. *Organizations with relatively high clan profiles will have high a higher than average adoption of Employee related SB practices*

Hypothesis 2b. *Organizations with relatively high clan profiles will have high a higher than average adoption of Ethical SB practices*

3.2.1.2. Adhocracy

The Adhocracy profile values growth and resource acquisition. This culture is also referred to as “development culture” because of its focus on innovation and external orientation (Denison & Spreitzer, 1991; Parker & Bradley, 2000; Zammuto & Krakower, 1991). Decision making is adaptable, and there is an emphasis on informal coordination and control, as well as horizontal

communication (Linnenluecke et al., 2009).

An adhocracy culture parallels the open-natural systems models (Scott, 2003) as well as the organizational culture and quality ideology (Barley & Kunda, 1992). These models highlight the importance of the external environment as well as the moral authority and employee commitment to manage in turbulent environments. These systems have an external orientation and also include efficient use of resources (Linnenluecke et al., 2009). We therefore suggest that Adhocracy cultures have a high adoption rate of externally oriented business practices; supply chain management and research and innovation.

Hypothesis 3a: *Organizations with relatively high adhocracy profiles will have high a higher than average adoption of Externally oriented SB practices*

Hypothesis 3b: *Organizations with relatively high adhocracy profiles will have high a higher than average adoption of research and innovation SB practices*

Hypothesis 3c: *Organizations with relatively high adhocracy profiles will have high a higher than average adoption of Supply chain management SB practices*

The open systems model parallels Scott (2003) classification of open-natural systems models which highlight the importance of the external environment in affecting the behavior, structure and life changes of organizations. Underlying themes are evolutionary learning and adaptation (Weick, 1969), the importance of discretionary behavior and autonomy (Trist, 1981), a recognition of the wider social and economic environment (Miller & Rice, 1967), exchanges with the environment through resource dependency (Pfeffer & Salancik, 1978), as well as social pressures from institutional constraints (DiMaggio & Powell, 1983). The open

systems model also reflects Barley and Kunda's (1992) organizational culture and quality ideology, which emphasizes moral authority, social integration, quality, flexibility, and employee commitment to manage in turbulent environments (Linnenluecke, M. & Griffiths, A., 2010).

3.2.1.3. Hierarchy

The hierarchical culture type values conformity, enforcement of rules, achieving stability & control, precise communication and data based decision making (Jones, Jimmieson, & Griffiths, 2005; Linnenluecke et al., 2009; Zammuto & Krakower, 1991; Zammuto et al., 2000a). There is an emphasis on vertical communication and compliance is enforced through rules and regulations (Zammuto et al., 2000a).

Other management theories show some parallel to the 4 culture types in the CVF. The hierarchical culture, in particular, has been theorized to be more focused on economic performance above else (Linnenluecke et al., 2009). Scientific management (Barley & Kunda, 1992; Zammuto et al., 2000a) and Closed rational systems models (Scott, 2003) depict internally focused organizations as bureaucratic structures that aim to improve organizational efficiency and economic performance (Scott, 2003; Zammuto et al., 2000a). Therefore, I hypothesize that organizations with high internal focus, will have practices that are based on compliance, reporting, improving economic performance and processes efficiencies.

Hypothesis 4a: *Organizations with relatively high hierarchical profiles will have high a higher than average adoption of Compliance based SB practices*

Hypothesis 4b: *Organizations with relatively high hierarchical profiles will have high a higher than average adoption of Preventative SB practices, such as eco-efficiency strategies or waste*

prevention/reduction.

Hypothesis 4c: *Organizations with relatively high hierarchical profiles will have high a higher than average adoption of Financial & Risk related SB practices*

Hypothesis 4d: *Organizations with relatively high hierarchical profiles will have high a higher than average adoption of Monitoring and reporting related SB practices*

3.2.1.4. Market

Market cultures value efficiency, productivity, goal-setting, instructional communication and centralized decision-making (Jones et al., 2005; Linnenluecke et al., 2009). This culture type has been referred to as the “rational-goal culture” because it emphasizes goals and outcomes (Denison & Spreitzer, 1991). Competent performance leading to organizational goal achievement, is rewarded (Linnenluecke et al., 2009; Zammuto et al., 2000a).

Open rational systems models (Scott, 2003) and the system rationalism ideology (Barley & Kunda, 1992) focus on the planning, forecasting, controlling, and the ability of the organization to match the external environment (Linnenluecke et al., 2009). Efficiency, planning and goal-setting are highly valued by this culture type. Thus, I hypothesize that an organization with a high market culture, will adopt practices that are based on resource efficiency practices, operational efficiency practices, externally oriented practices and stakeholder engagement practices.

Hypothesis 5a: *Organizations with relatively high market profiles will have high a higher than average adoption of Product & Process & Resource and operational efficiency practices.*

Hypothesis 5b: *Organizations with relatively high market profiles will have a higher than average adoption of externally oriented practices.*

3.3. Contingency Theory and Organizational Performance

To clarify the interplay between organizational culture and SB practices, we consider how each of the four cultural traits (i.e. involvement, consistency, adaptability and mission) interacts with the others to influence firm performance. Contingency theory provides a lens through which we can examine the interplay between our three variables of SB practices, organizational culture and organizational performance. The contingency model argues that different combinations are more effective under certain conditions (Guest & Conway, 2004), and we utilize this theory to investigate whether the cultural profile of the firm has any influence on successfully implementing SB practices and achieving positive financial performance.

At a basic level, contingency theory proposes that organizations adapt their structure to maintain fit with changing contextual factors, to attain high performance (Sousa & Voss, 2008). Contingency studies generally involve three types of variables:

- Contextual (or contingency) situational characteristics exogenous to the organization. The ability to control or manipulate these variable is limited, though change is possible in the long term with substantial effort.
- Response variables – organizational actions taken in response to contingency factors

- Performance variables – dependent measures that represent specific aspects of effectiveness, that allow us to evaluate the fit between contextual and response variables (Sousa & Voss, 2008).

Our research uses the contingency model to understand the effect that SB practices can have on organizational performance, considering the contingent variable of organizational culture.

Researchers posit that by having alignment between organizational culture and organizational practices, performance on these practices will be enhanced, and in so doing, positively affect the financial performance of the organization. Thus, I put forward the final hypothesis, that greater alignment in culture and practices, will result in better performance.

Hypothesis 6a: Organizations with alignment between organizational culture and SB practices, will perform better financially, as compared to organizations without alignment.

4. RESEARCH DESIGN

4.1. Introduction

The last chapter examined the relationship between corporate sustainability and organizational culture. I also identified Sustainable Business (SB) practice categories, which are significant in understanding business sustainability strategies, at different points of implementation. A review of the literature highlighted that SB practices can be ordered hierarchically. For example, the practice category of compliance and pollution prevention were considered to be basic steps to achieving sustainability, whereas, the practice category of using clean energy or helping alleviate poverty in less developed countries was considered more advanced. Therefore, at each performance level, we would expect to find different combinations of SB practices being implemented. As an organization increases its focus on sustainability issues, it will need to employ higher-level SB practices that can accomplish its more ambitious sustainability goals.

It is on this premise that I developed Phase One of the research. In this phase, I will collect data on the SB practices adopted by organizations in the sample. I will then use cluster analysis to identify bundles or “clusters” of these organizations, based on the SB practices that they have adopted. The classification of organizations according to SB practice bundles will form the basis for Phase Two of the study. Then the financial performance of these organizations will also be analyzed to identify the most effective SB bundles.

Research suggests that an organization’s culture will have some effect on the adoption of SB practices. Thus, I postulate that organizations will choose SB bundles that fit with their

organizational cultures. I expect that a stronger fit between culture and the bundles will result in a stronger corporate performance. This will be examined in Phase Two of the study. For the purposes of this study, I define businesses and organizations to be profit-making entities.

I begin this chapter by describing the method for the study. This includes the data collection method, the sources, and how the sample will be selected. The final section looks at how the data will be analyzed as well as how reliability and validity are addressed.

4.2. The Method

Two possible approaches for collecting data were questionnaires, and analyzing secondary data through content analysis. Whilst both methods were suitable, I chose content analysis to be the main data-collection instrument. Following are some points in support (or against) the two methods.

The greatest advantage of using the survey is that it is more likely than other methods to generate a sample large enough for statistical generalization. Also, there is little to no variability in the interpretation fixed-point survey data.

The difficulty with surveys is that are time consuming and difficult to administer. In an age of survey fatigue, one would expect few responses to a questionnaire collecting data on three separate variables. Also, to collect organizational culture information, each organization would need at least 5 respondents to ensure appropriate aggregation.

Content analysis is a fast-growing technique in quantitative research. It is a quantitative analysis of message characteristics (Neuendorf, 2002). This analysis allows researchers to synthesize texts with a large number of words into smaller, more manageable categories (Tate, Ellram, & Kirchoff, 2010). There is also a greater freedom in the selection of data sources.

One downside to content analysis is that the analysis of the text will reveal what the organization wishes to write about, and not necessarily what it is they are actually doing. Whilst the use of many data sources may mitigate this issue, it is nevertheless important to consider the implications for the results.

The focus of this study is on testing the assumption that bundles of SB practices are adopted by businesses, and affect corporate performance. This lends itself to a theory-testing approach. Further, to arrive at these SB practice bundles, a large sample of organizations were examined to arrive at a meaningful conclusion. Because of resource and time constraints, doing so may be impossible using survey research. For the reasons above, I selected content analysis as my primary data-collection method.

4.3. Measuring Culture: The Competing Values Framework

I measure organizational culture using the Competing values framework (CVF) (Quinn & Rohrbaugh, 1983). The CVF is one of the most frequently used measures of organizational culture. It was empirically derived, has been validated in previous research, and it captures most of the dimensions of organizational culture. (Cameron, Quinn, DeGraff, & Thakor, 2006; Linnenluecke, M. K. & Griffiths, A., 2010). Furthermore, it has been used in studies on

organizational culture and corporate sustainability as well as studies on culture change (Linnenluecke, M. K. & Griffiths, A., 2010). While no single culture framework is exhaustive and captures every relevant aspect, the CVF with its four-factor structure is validated in several studies (e.g. Ostroff et al., 2013; Zammuto & Krakower, 1991).

The CVF presents a three-dimensional representation of competing core values. These three dimensions are focus (internal capabilities & integration vs. external orientation and differentiation), structure (flexibility and discretion vs. stability and control) and means-ends (Hartnell, Chad A., Ou, Amy Yi, & Kinicki, Angelo, 2011). The third dimension, means-ends, is the theoretical explanation of the behaviors (means) that arise from values and beliefs, and the desired effectiveness criteria that they are tied to (ends) (Hartnell, Chad A. et al., 2011). The CVF identifies the four culture types of Clan, Adhocracy, Hierarchy, and Market.

SEE FIGURE 3.1: THE COMPETING VALUES FRAMEWORK.

Table 4.1 below shows the culture elements (artifacts, values and assumptions) associated with each culture type and the effectiveness criteria for each type.

TABLE 4.1 THE CVF'S FOUR CULTURE TYPES

Source: (Hartnell, Chad A. et al., 2011)

Culture Type	Assumptions	Beliefs	Values	Artifacts (behaviors)	Effectiveness Criteria
Clan	Human affiliation	People behave appropriately when they have trust in, loyalty to, and membership in the organization.	Attachment, affiliation, collaboration, trust, and support	Teamwork, participation, employee involvement, and open communication	Employee satisfaction and commitment
Adhocracy	Change	People behave appropriately when they understand the importance and impact of the task.	Growth, stimulation, variety, autonomy, and attention to detail	Risk-taking, creativity, and adaptability	Innovation
Market	Achievement	People behave appropriately when they have clear objectives and are rewarded based on their achievements.	Communication, competition, competence, and achievement	Gathering customer and competitor information, goal-setting, planning, task focus, competitiveness, and aggressiveness	Increased market share, profit, product quality, and productivity
Hierarchy	Stability	People behave appropriately when they have clear roles and procedures are formally defined by rules and regulations.	Communication, routinization, formalization, and consistency	Conformity and predictability	Efficiency, timeliness, and smooth functioning

I chose the CVF as the measure for organizational culture because of its wide use in a variety of disciplines; its proven association with organizational effectiveness; and its empirically tested reliability and content validity (Hartnell, Chad A. et al., 2011). The CVF has one disadvantage though; it is predicated on the assumption that the different types of organizational culture are competing or contradictory. However, none of the criteria exclude the presence of any of the others. This non-exclusivity implies that culture types are likely to have varying relationships with the criteria rather than competing or opposite relationships (Hartnell, Chad A. et al., 2011).

4.3.1 Limitations of using CSR to measure culture

Corporate Social Responsibility reports are widely accepted means of communicating sustainability strategies (Kolk, 2003). These reports are generally directed to investors, NGO's,

customers and other stakeholders (Tate et al., 2010). The reports contain information about the company's social and environmentally responsible practices, safety information, involvement and commitment to social and environmental issues (Solomon & Lewis, 2002).

One major limitation of utilizing CSR reports in this study, particularly to measure organizational culture, is that it may be unclear whether the actions reported are the same as the actual actions of the firm. There is some concern in the literature that companies merely write to appease stakeholders, and are not forthcoming about any negative or potentially harmful information (Solomon & Lewis, 2002). Some other researchers have found the CSR to be a good depiction of the organization's actions (Montabon, Sroufe, & Narasimhan, 2007).

4.4. The Sample

4.4.1. Data Sources

The primary document for analysis was the Corporate Sustainability Report (CSR). We chose to select 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. Also, the standardization of the reports makes the GRI database suitable for our analysis.

The reports submitted to the GRI database include: GRI reports, CSR reports, Annual Reports and Integrated reports. These reports contained data on two of the three variables: the sustainable business practices and organizational culture. In the case of financial performance, we calculated the Return on Equity (ROE) and Return on Assets (ROA) with

Net Income, Total Assets and Shareholders Equity, acquired from COMPUSTAT and CRSP databases. We collected over 1000 reports for 200 randomly-selected organizations over a 7-year period – 2009 to 2015, though not all organizations have reports for this entire period.

Following is the list of data sources by variable:

1. Organizational culture – GRI report (including GRI reports/CSR reports/Annual Reports/Integrated reports)
2. Sustainable business practices – GRI report (including GRI reports/CSR reports/Annual Reports/Integrated reports)
3. Corporate financial performance – COMPUSTAT & CRSP Financial Databases

The following filters were applied to GRI's extensive list:

1. Size – Our study excluded SME's. GRI started a reporting initiative for SME's in 2014, so very few SME's had reported previously. The remaining sizes were Large and Multi-National-Enterprises (MNE's). Large enterprises are characterized by GRI to be more than or equal to 250 employees; Or more than EU\$50 million turnover; Or Balance sheet total EU\$43 million. This is the same for MNE's but they also need to be Multi-national as well. This classification is based on the EU definition of size.
2. Sector – We concentrated on production/manufacturing businesses because of the nature of the sustainable business practices that we were interested in.

3. Reporting frequency – Selected businesses reporting more than once within the 2009-2015 time period. We use number of reports as a control variable in the analysis, to ensure that the frequency of reporting does not sway the results.
4. Type of report - The GRI database contains non-GRI and GRI-referenced reports. These reports make mention of the GRI standard, but may or may not include sustainability information. Therefore, these will be excluded from the sample. Only GRI reports/CSR reports/Annual Reports/Integrated reports were included.
5. Language – limitations exist with regards to language and translation. Therefore, only reports in English were used. Some of these include translated documents.

We chose to control the size, industry and country, because each of them influences organizational culture and SB practices adopted. Number of employees and revenue is used as the measure for size. The size of a business can have some effect on the culture of the organization; this is particularly true for the dimension of flexibility; larger, multi-national businesses might be less flexible due to their size. Size may also influence 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 country of operation also has an influence on the organizational culture of the business and the SB practices it adopts. Different countries 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 the US does.

The resulting sample included: 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.

4.5. Collecting and Organizing the Data

Once all these filters were applied, 200 companies were randomly selected from the remaining list of companies. The GRI reports (pdf's) for each business were downloaded from the GRI website and company websites. The following pages were removed from the pdf – cover page, Table of Contents, About this report, Pages with only numeric tables, Pages with only photos, GRI Index, Contact page, Auditors Assurance, Third party statements, Feedback forms, Organizational charts, SGS certificates, Forward looking statements, Biographies, Title pages. The document was then converted into a .txt file using Adobe Acrobat. Some reports were not convertible and therefore some loss of documents occurred. The text document was then examined for any issues e.g. words stuck together, spelling, codes etc. and corrected. The text is changed to American English in the even that it wasn't already.

4.6. Coding

4.6.1 Computerized Text Analysis

Computerized text analysis is performed using Centering Resonance Analysis (CRA) (Corman, Kuhn, McPhee, & Dooley, 2002; McPhee, Corman, & Dooley, 2002), a manifest content analysis method which represents text as a network (Carley & Kaufer, 1993; Danowski, 1993). CRA draws on centering theory (Grosz, Weinstein, & Joshi, 1995) that states that competent authors or speakers generate utterances that are locally coherent by focusing their statements on conversational centers. It uses natural language processing to identify centers (noun phrases) in text, and links the component words (tokens) into a network. CRA has been demonstrated to have convergent, divergent, and face validity (Corman et al., 2002), and has been shown to capture the manner in which a collective of individuals frames their interpretation of a text (Kuhn & Corman, 2003). CRA uses betweenness-centrality (Freeman, 1979) as a measure of a word's influence. Thus, influence is related to the extent to which a word figures in chains of relationships between other words. Using this operational definition, the influence of a word is related to its ability to span conceptual boundaries; it also means that the most influential words represent the structural center of the network. Resonance, a measure of similarity between two CRA networks (Corman et al., 2002) can also be computed for a set of texts, and is calculated as the cosine-similarity between two texts, as weighted by word influence values.

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 Crowdad to perform CRA (Tate et al., 2010).

4.6.2 Developing SB practice codes

1021 txt files were analyzed in Crowdad, and 43 589 words returned. Words appearing less than 10 times in the word list were removed, as were words with an influence value lower than 0.1. The result was 462 unique words over 837 reports.

We also align 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 4.3 below.

TABLE 4.2 SB PRACTICE CODES

Source: (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	Reduction
5	Chemical	Cotton	Customer	Performance	People	Corporate	Information	Effort	Project	Roofing
6	Standard	Home	Environment	Organization	Quality	Operation	Activity	Constraint	Gas	Construction
7	Forest	Supply	Group	Local	Consumer	World	Bank	Initiative	Power	Office
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	Pain
19	Practice	Farm	Leadership	Performed			Improvement		Electricity	
20	Paper	Computer	Environment	Protection			Investment		Efficiency	
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						

The words were then examined for relevance to sustainable business practices. Through 3 cycles of elimination, the word list was whittled down to 216 words. Two coders then sorted

these words into 16 themes. Some words were removed during the coding process because of ambiguity or irrelevance. At the end of the coding process 178 codes remained, an average of 11 codes per theme. The inter-rater reliability (percentage of agreements between two authors coding the same transcript) was 85%. See Table 4.4 below.

TABLE 4.4 FINAL SB PRACTICE CODES

Product & Process	Supply chain & Logistics	Energy/Water/ Materials	Monitoring /Reporting	Waste/Emissions	R&D/Clean Technology/Green	Ethics	Developing world	External & Consumer Orientation	Community Focus & Philanthrop	Employees & Recruitment	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	communicational	paper	university	code	mexico	country	local	family	future	cost	emergency	iso	environmental	
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

4.6.3. Organizational Culture Codes

Codes: Rather than developing entirely new codes for Organizational culture, we use codes already developed by other Content Analysis researchers. As Organizational culture is a mature concept, many methods of analysis have been used in its study. Dueholm Müller and Axel Nielsen (2013) recently developed codes for Organizational culture content analysis, derived from the Competing Values Framework (CVF). We utilize their codes in this research, and also expand the codes by including synonyms of the selected code words.

TABLE 4.5 ORGANIZATIONAL CULTURE CODES

Source: (Dueholm Müller & Axel Nielsen, 2013)

Adhocracy		Clan		Hierarchy		Market	
Code	Search	Code	Search	Code	Search	Code	Search
ad hoc	ad hoc	autonomy	autonom	accountability	accountab	aggression	aggress
impromptu	impromptu						
adaptation	adapt	cohesion	cohes	consistency	consisten	competitiveness	competit
			commitment & COOCCUR				
anticipation	anticipat	commitment to employees	employee	control	control	contract	contract
change	change	concern for people	human	coordination	coordinat	control	control
creativity	creativ	consensus	consen	efficiency	efficien	customer	customer, customization
			human resource; train; employee COOCCUR develop; competenc; personal COOCCUR develop; individual COOCCUR develop; skill COOCCUR develop; train COOCCUR develop; human resource COOCCUR develop; competenc				
cutting edge	cutting edge	employee development	COOCCUR develop	formality	formal	environment	environment
dynamism	dynami	empowerment	empower	hierarchy	hierarch	external	external
entrepreneurial	entrepreneur	individuality	individual	organization	organiz	goal	goal
experimentation	experiment	informality	informal	policy	policies, policy	market share	market share; market; shareholder; share
flexibility	flexib	involvement	involve	predictability	predict	penetration	penetrat
imagination	imagin	loyalty	loyal	procedure	procedur	performance	perform
innovation	innovat	mentor	mentor	reliability	reliab	productivity	productiv
new	new	morale	morale	rule	rule	profit	profit
					rule enforcement, rule-enforcement;		
opportunity	opportunit	participation	participa	rule enforcement	enforcement	results-orientation	result
			self manage; self manage;		smooth flowing;		
pioneering	pioneer	self management	self COOCCUR manag	smooth flowing	smooth-flowing	return	return ; reventus
					smooth running,		
rapid	rapid	semiautonomous	semiautonomous; autonom	smooth-running	running	supplier	supplier
			team; team COOCCUR				
research	research	teamwork	work; team-work	stability	stability; stable	target	target
			work environment;				
risk taking	risk taking, ventur;	work environment	workspace; work place	standardization	standard		
specialization	specializ			structure	structur		
temporary	temporary			uniformity	uniform		
uncertainty	uncertain						
vision	vision						

The researchers conducted a similar process to our Sustainable Business practices codes. They searched through reports and other documents for words and phrases associated with the four organizational culture types. Through rounds of discussion they reduced the list to the above codes, and achieved an 80% inter-rater reliability (Dueholm Müller & Axel Nielsen, 2013).

See TABLE 4.5 ORGANIZATIONAL CULTURE CODES

4.7. Content Analysis

Once the codes were finalized, we then used the Crawdad word lists to search for our practice codes. The search returned the influence of the word use in each report. The sum of influences was taken for multiple occurrences of the word in the same reporting year, per practice theme. Once these words by year/company were compiled, we then summed up all the words within a particular practice theme. Next, we averaged over the years so that we had one influence score per company per practice theme.

The result was 180 companies with influence scores over the 16 practice themes. We then included the number of reports obtained per company, and then filtered out any organization with less than 3 reports. The effect of the differences in reporting frequency was diminished when averaging, but having 2 reports verses another business with 7 reports may have significantly affected our results. We also included the number of reports as a control variable in the analysis, to ensure that there is no relationship between reporting frequency and influence scores. 159 companies were left after this filter was applied.

4.7.1 Financial performance

The dependent variable, financial performance, is acquired from COMPUSTAT and CSRP databases. We use the indicators of Return on Equity (ROE) and Return on Assets (ROA) to determine financial performance.

ROA is a widely used financial indicator of profitability. It demonstrates how profitable a company is relative to its total assets, and gives some indication how efficiently management is using its assets to generate earnings. The formula for ROA is $\text{Net Income} / \text{Total Assets}$.

ROE is also a widely used financial indicator of profitability. It indicates how much profit a company has generated with its shareholder's investments. The formula for ROE is $\text{Net Income} / \text{Total Shareholder's Equity}$.

The indicators ROA and ROE are usually looked at together to give a better indication of a company's profitability. There is no recommended ROA or ROE for companies; usually an organization's indicators are compared to other companies within its industry.

4.8 Statistical Analysis

We used Ward's method of hierarchical cluster analysis (Ward, 1963) to analyze the practice data collected. 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 & Blashfield, 1984 as cited in ; Toh & 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 & Morgeson, 2008). Cluster analysis has been used in studies categorizing organizations by the practices they adopt (Toh & Morgeson, 2008).

For the second phase of the study, we performed cluster analysis similar to the practices, on our culture data. The culture data was organized in the same way as the practice data – with one influence value per organization for the 4 culture categories. One difference was that we normalized the culture data, by using the percentage of total influence, for each culture category. We did this because there were differences in the types of report, the number of

pages of each report, and the original language of the report. By normalizing the influence scores, we gave each organization an equal footing on which they could be compared. We used hierarchical clustering methods to first visually examine the dendrogram for the ideal clustering solutions. We then used K-means clustering techniques after selecting the optimal cluster solution. We removed 2 outliers that severely skewed the clustering.

In the final part of our analysis, we used ANOVA to identify practice clusters which were most successful, using the financial indicators of ROA and ROE. Financial data for only 59 of the organizations were available. The companies with financial data were representative of the larger sample, and were scattered across the 8 practice clusters.

4.9 Control Variables

We chose to control the size, industry and country, because each of them influences organizational culture and SB practices adopted. The size of a business can have some effect on the culture of the organization; this is particularly true for the dimension of flexibility; larger, multi-national businesses might be less flexible due to their size. Size may also influence 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 country of operation also has an influence on the organizational culture of the business and the SB practices it adopts. Different countries 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 the US does.

5. RESULTS

5.1. Introduction

Businesses are in a place of incredible power when regarded for their ability to change and/or influence production, material use and even that of consumption patterns. However, their attempts at adopting and implementing Sustainable Business (SB) practices have been said to be nothing more than superficial pursuits meant to reap competitive advantages from behaving responsibly. This behavior may be partially due to the lack of guidance or understanding of what a sustainable organization should look like. This study is meant to extend the business and sustainability research by presenting the current sustainability strategies through the SB practices adopted. Contingency theory is utilized to explore whether particular organizational cultures are related to these sustainability strategies; and whether this relationship has implications on financial performance.

A review of the literature found a hierarchical clustering of organizations and SB practices from a compliance level to a sustainable level. There was also some agreement that organizational context does influence the practices that an organization adopts, and how successful they are in implementing such a practice. Successfully implementing a SB practice was also found to be positively associated with financial performance.

Over 1000 Corporate Social Responsibility (CSR) reports were retrieved from the Global Reporting Index (GRI) database, for approximately 200 companies, situated globally. Content analysis was used to extract information on two of the three variables – SB practices and organizational culture. The financial databases of COMPUSTAT and CRSP were used to find financial information.

It is important to keep in mind that the results of this study presents what business' *talk* about with regards to sustainability, rather than what they actually *do*.

This chapter provides a summary of the findings. I begin by reiterating the research questions and then review the tests that were performed and the results of those. In the discussion section, I consider those results and the implications it may have for this research.

Following are the research questions of this study:

1. What clusters or bundles of SB practices are currently used by businesses?
2. Which sustainable business(SB) practice bundles are associated with certain organizational cultural profiles?
3. If organizational culture and sustainable business practices are aligned, will this result in higher financial performance?

I will now review the tests performed to answer the above research questions.

5.2. RQ1. What clusters or bundles of SB practices are currently used by businesses?

Hypothesis 1a: Organizations will belong to a cluster within which the SB practices adopted are similar to other companies inside the cluster versus outside the cluster.

18 categories of SB practice codes (178 codes) were developed to analyze the CSR text. Using center resonance analysis, details on the codes used, their influence and frequencies were extracted. To understand the what sets of clusters were adopted by the sample organizations,

I used Ward's method of hierarchical cluster analysis. Both the Euclidean distance and Pearson correlation were used to identify clusters within the data. By viewing the resulting dendrograms from the cluster analysis (see Fig 5.1), it was noted that there were a range of possible clusters, with the optimal cluster lying somewhere in the 5-cluster to 12-cluster solutions. I examined the cluster membership numbers of each of these groups, and noticed several smaller clusters emerging after the 9-cluster solution. It was also noticed that between the 7th and 8th cluster there was a change in the configuration of the cluster membership, which did not change again after the 8-cluster solution. Therefore, I decided to use the 8-cluster solution (see Table 5.1).

FIGURE 5.1 CLUSTERING OF PRACTICES DENDROGRAM

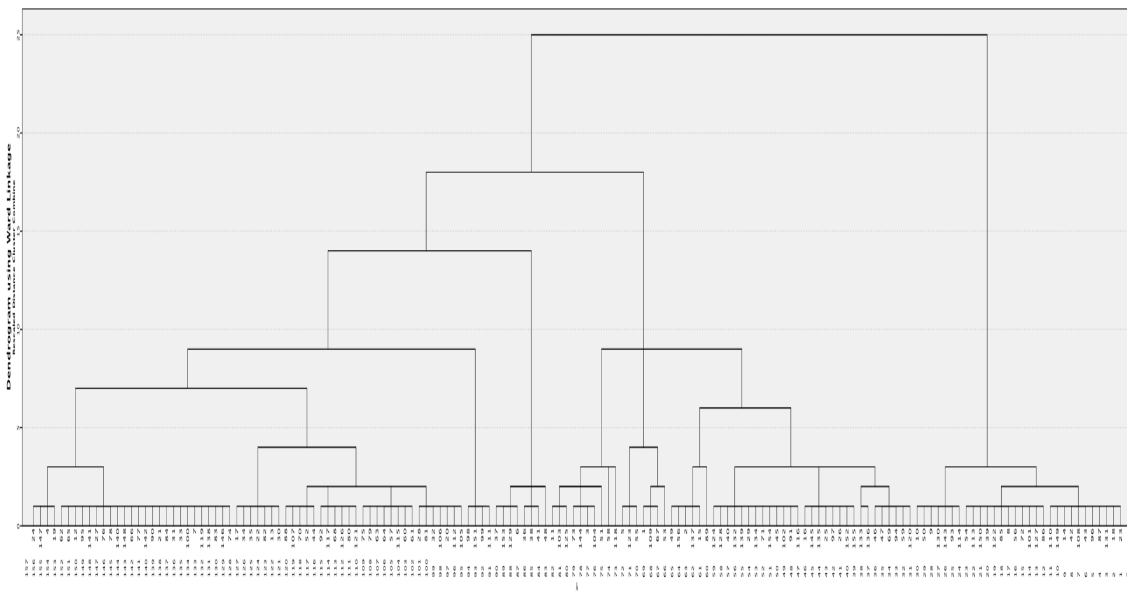


TABLE 5.1 COMPARING CLUSTER SOLUTIONS

Cluster solutions:	Number of companies by cluster											
	1	2	3	4	5	6	7	8	9	10	11	12
5	67	43	8	31	10	0	0	0	0	0	0	0
6	67	36	8	31	7	10	0	0	0	0	0	0
7	63	36	8	31	7	10	4	0	0	0	0	0
8	29	36	8	34	31	7	10	4	0	0	0	0
9	29	30	8	34	31	7	10	6	4	0	0	0
10	29	30	8	34	31	4	10	6	4	3	0	0
11	29	30	8	27	31	4	10	7	6	4	3	0
12	29	30	8	27	31	4	9	1	7	6	4	3

To determine whether there was a significant enough difference between the clusters, I performed independent t-tests on each pair of clusters (see appendix D: Table 5.1). The result helped to identify clusters which were particularly strong or weak (relatively) in certain practice themes. I then included the control variables of sector, region, organization type, size, type of report, and number of reports (see appendix E: TABLE 5.4). I used tables, calculating the chi squared value of the presence/absence of a control in a particular practice cluster (see appendix F: TABLE 5.5). The result allowed me to further distinguish the practice clusters, and provide greater description in order to name them.

Using this output, it was then possible to name the resulting clusters. The description included the SB practices that were scored low/high; any significant region, sector or other control variable which was influential or significant to the results. Following is the description of the resulting clusters. Each of the 8 practice clusters were named using previously researched organizational typologies. These will be discussed in the discussion section.

FIGURE 5.2 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

From the t-test results (see appendix D: TABLE 5.2) significant differences were found between the clusters, and also found that the clusters were hierarchical in nature – with the lowest level scoring the least on average in SB practices. Therefore, Hypothesis 1a was found to be valid.

The resulting eight clusters are described below:

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. It appears that the primary sectors of this cluster are predominantly found in developing countries, and this may explain the average score in Developing World practices. The Product & Process SB category is concerned with the design of product and process to reduce waste, increase efficiency and enhance end of life and use phases. The Ethics category focuses on elements of human rights treatment of minorities and vulnerable populations.

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 & Reijnders, 2001) and ‘Reactive’ (Sharma, S. & Vredenburg, H. , 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.

I chose to call this cluster of organizations ‘Compliant’ because they have focused on mentioning 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 minimal wastes in its reports. 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.

This cluster of organizations performs really well when focusing on their Product and process, but fail to showcase very important sustainability elements, such as supply-chain management

and sustainable sources. It was rather surprising to see the result of Health & Safety and Finance and Risk, but this may be an outcome of the type of report. In a CSR document, a company may not mention much of their internal Health & Safety protocol, or mention information that is included in their annual report.

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' (Barley & Kunda, 1992; Carroll, A., 1979; Henriques & Sadosky, 1999; Russell, S. V. & McIntosh, M., 2011); 'Pollution Prevention' (Dias-Sardinha & Reijnders, 2001; Hart, Stuart L. , 1995) and 'Firefighter' (Hunt & Auster, 1990).

I 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. The low score on Health and Safety may again be a result of the nature of the reports.

This set of organizations has been referred to as ‘Accommodative’ (Carroll, A., 1979; Henriques & Sadosky, 1999; Russell, S. V. & McIntosh, M., 2011), ‘Efficiency Experts’. They focus on eco-efficiency of production processes through more effective use of process inputs, natural resources and energy.

I 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 kind of organization as Managerial (Zadek, 2004); Pragmatist (Hunt & Auster, 1990); Commercial & environmental excellence (Roome, 1992a); Strategic (Zadek, 2004); Strategic proactivity (Dunphy, Griffiths, & Benn, 2007).

I 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, and this may explain the high score in Finance and Risk. The primary sectors were Food and Beverage and Metals, which explains the high Health and Safety score; and the primary region is Africa – which explains the high score in Developing world practices.

With the high scores explained, these companies have regarded some sustainability strategies as important, including the involvement of leadership in strategy development. In addition to certain resource efficiencies and waste minimization, the cluster focuses on some compliance based practices including ethical codes, and their public or outwardly facing strategies. The very average performance in these compliance and efficiency scores suggest a system that is just starting to look beyond compliance based strategies.

Research has considered these to be ‘Compliance plus & quality assurance’ (Roome,1992); ‘Concerned citizen’ (Hunt & Auster, 1990). I 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.

Researchers have termed this cluster of organizations to be 'Proactive' (Carroll, A., 1979; Henriques & Sadosky, 1999; Russell, S. V. & McIntosh, M., 2011) describing them as having a consistent pattern across a range of sustainability issues. I 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, similarly to cluster 6 (Proactive). However, this cluster also performs highly in 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 primary sectors provide some explanation for the high Health and Safety performance.

The high Internal Business strategies and Monitoring and reporting signal that the business has moved towards an organizational adoption of a sustainability strategy that is being monitored and reported. This cluster of organizations has also focused on improving efficiencies and reducing wastes in their products and manufacturing processes. There is a sense that this cluster of organizations is focused on improving internal strategies whilst still maintaining a good enough performance on external, environmental and societal strategies.

The literature has described this cluster as being the Proactivist (Hunt & Auster, 1990); Leading edge (Roome, 1992a); Leading edge (Roome, 1992a). I 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 primary location may explain the high performance in Developing world practices.

This cluster is the highest performing in Supply chain practices. Supply chain practices are concerned with Raw materials, suppliers, and sourcing issues. These companies are all in Asia and are probably part of complex supply chains hence their need to ensure their commitment to sustainable supply chains. This may also explain the high performance in Monitoring and Reporting, since sustainable supply chains regard transparency highly. Low performance in Research and Development might be signaling that most of the design and research comes from North America and Europe, with mostly the manufacturing elements being centered in Asia. The low Health and Safety score may again be due to the type of report.

This cluster demonstrates some ability to be flexible and adapt to the demands of the complex supply chains that they may be part of. Even without a high focus on Research, all the other practices are scored ‘well-enough’ and show that there must be continuous improvement and adaptation. The environmental/social regulations in Asia are also much lower than those of the U.S. and E.U., and for these companies to perform on par and above the other clusters, really highlight their ability to go above the minimum required standards. The literature refers

to this cluster of organizations as ‘Strategic’ (Zadek, 2004); Strategic proactivity (Dunphy et al., 2007); and Product Stewardship (Hart, Stuart L. , 1995) I call this cluster ‘Adaptive’ because of its ability to transform based on market demands.

Hypothesis 1a stated that: Organizations will belong to a cluster within which the SB practices adopted are similar to other companies inside the cluster versus outside the cluster. The above resulting clusters all displayed significant differences from each other (see appendix D, table 5.2) and demonstrated a hierarchical clustering of the sample organizations, based on their adopted SB practices. This is somewhat similar to the theoretical ordering found in the business and sustainability literature, with a movement from compliance-based strategies to more strategic, diverse sustainability strategies. One thing to note is that this sample did not provide the ‘Sustainable’ (Dias-Sardinha & Reijnders, 2001; Russell, S. V. & McIntosh, M., 2011) or ‘Visionary’ (Gallagher, nd) cluster of organizations. Such an organization would have demonstrated a higher than average performance in environmental, social, internal and external strategies – with sustainability principles embedded across the organization (Carroll, A., 1979; Henriques & Sadorsky, 1999; Russell, S. V. & McIntosh, M., 2011). Very few organizations in the world may exhibit these properties, and may need be to identified through in depth case studies.

5.3. RQ2 - Which sustainable business(SB) practice bundles are associated with certain organizational cultural profiles?

Hypothesis 2a. *Organizations with relatively high clan profiles will have high a higher than average adoption of Employee related SB practices*

Hypothesis 2b: *Organizations with relatively high clan profiles will have high a higher than average adoption of Ethical SB practices*

Hypothesis 3a: *Organizations with relatively high adhocracy profiles will have high a higher than average adoption of Externally oriented SB practices*

Hypothesis 3b: *Organizations with relatively high adhocracy profiles will have high a higher than average adoption of research and innovation SB practices*

Hypothesis 3c: *Organizations with relatively high adhocracy profiles will have high a higher than average adoption of Supply chain management SB practices*

Hypothesis 4a: *Organizations with relatively high hierarchical profiles will have high a higher than average adoption of Compliance based SB practices*

Hypothesis 4b: *Organizations with relatively high hierarchical profiles will have high a higher than average adoption of Preventative SB practices, such as eco-efficiency strategies or waste prevention/reduction.*

Hypothesis 4c: *Organizations with relatively high hierarchical profiles will have high a higher than average adoption of Financial & Risk related SB practices*

Hypothesis 4d: *Organizations with relatively high hierarchical profiles will have high a higher than average adoption of Monitoring and reporting related SB practices*

Hypothesis 5a: *Organizations with relatively high market profiles will have high a higher than average adoption of Product & Process & Resource and operational efficiency practices.*

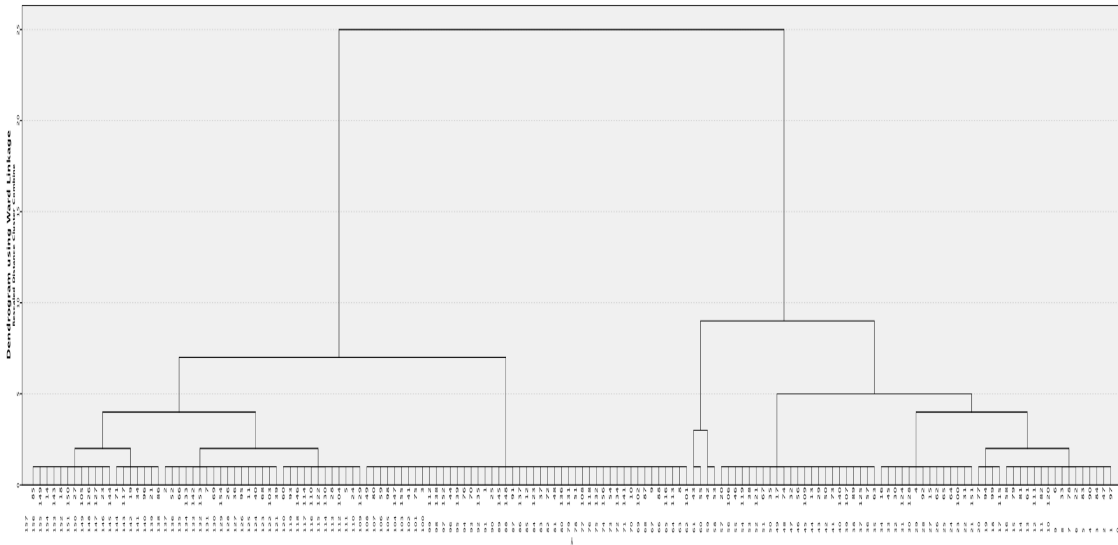
Hypothesis 5b: *Organizations with relatively high market profiles will have high a higher than average*

adoption of externally oriented practices.

5.3.1 Organizational Culture

To answer this question first required the understanding of the cultural profiles that exist within the sample. As mentioned previously, I used the Competing Values Framework (CVF) to distinguish the cultural profiles. I used previously published codes to conduct the text analysis for this portion of the research (Dueholm Müller & Axel Nielsen, 2013). The CSR reports were analyzed for the 250 culture codes, across the 4 culture types. I performed cluster analysis similar to the process with the SB practices, on the culture data. The culture data was organized in the same way as the practice data – with one influence value per organization for the 4 culture categories. One difference was that the culture data was normalized using the percentage of total influence, for each culture category. This was done because there were differences in the types of report, the number of pages of each report, and the original language of the report. By normalizing the influence scores, each organization was given an equal footing on which they could be compared. I used hierarchical clustering methods to first visually examine the dendrogram for the ideal clustering solutions. it was noted that there were a range of possible clusters, with the optimal cluster lying somewhere in the 4-cluster to 7-cluster solutions. K-means clustering techniques were then used for 4, 5, 6, & 7 cluster solutions, and after examining the cluster membership profiles, it was concluded that the 5-cluster solution was optimal. 2 outliers were removed that severely skewed the clustering.

FIGURE 5.3 CLUSTERING OF CULTURE TYPES DENDROGRAM



A series of independent T-tests were performed to determine if there was a significant difference between the 5 culture clusters (see appendix G: TABLE 5.6). This was used to help determine how the clusters differentiated from each other, using the CVF culture types.

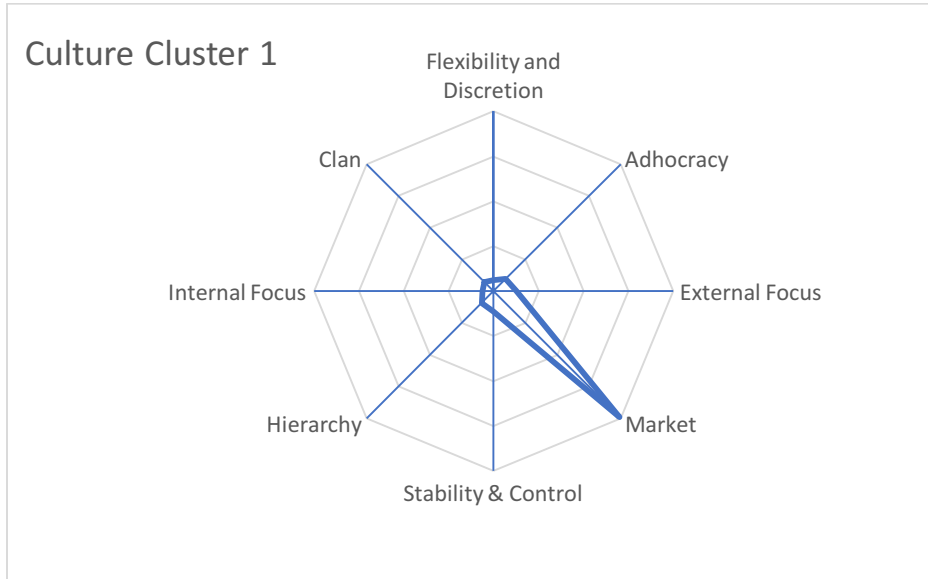
The resulting culture clusters are shown in table 5.7.

TABLE 5.7 CULTURE CLUSTER RESULTS

	TTESTS		ANOVA	Descriptions
	Within Culture	Within cluster		
CU1	Mkt	Mkt	Highest in Mkt	Market
CU2	Internal (Hier & Clan)	Stability (Mkt & Hier)	Highest in Hierachy	Stability with some flexibility, less External than Internal
CU3	External (Adhoc & Mkt)	External (Mkt & adhoc)	Avg	Externally oriented
CU4	Internal with some external (Clan,	External/Stability with Internal (Mkt,	Highest in Clan	Most balanced
CU5	Internal with some external (Hier/Adhoc, Clan)	External with Internal (Adhoc/Hier)	Highest in Adhoc	Flexible with some Stability, less External than internal

Culture cluster 1: This cluster demonstrated very high 'Market' affiliation. It was significantly higher in the market type amongst the 5 clusters.

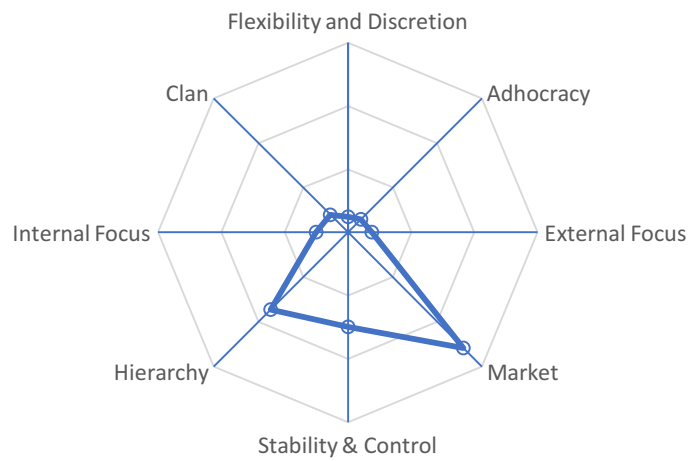
FIGURE 5.4 MARKET CLUSTER PROFILE



Culture cluster 2: Amongst the 5 clusters, this cluster was significantly higher along the internal dimension – Hierarchy and Clan. Within this cluster, t-tests showed the stability dimension was significant – Market and Hierarchy. The ANOVA analyses showed this cluster differentiating from the others on the hierarchy type. Based on these analyses, this cluster was considered to be the ‘Stable’ cluster.

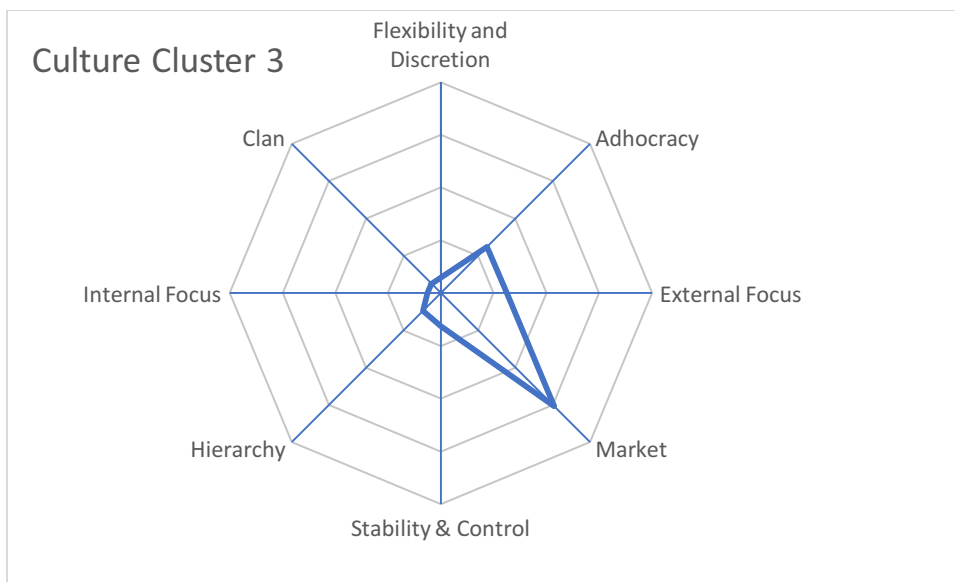
FIGURE 5.5 STABLE CLUSTER PROFILE

Culture Cluster 2



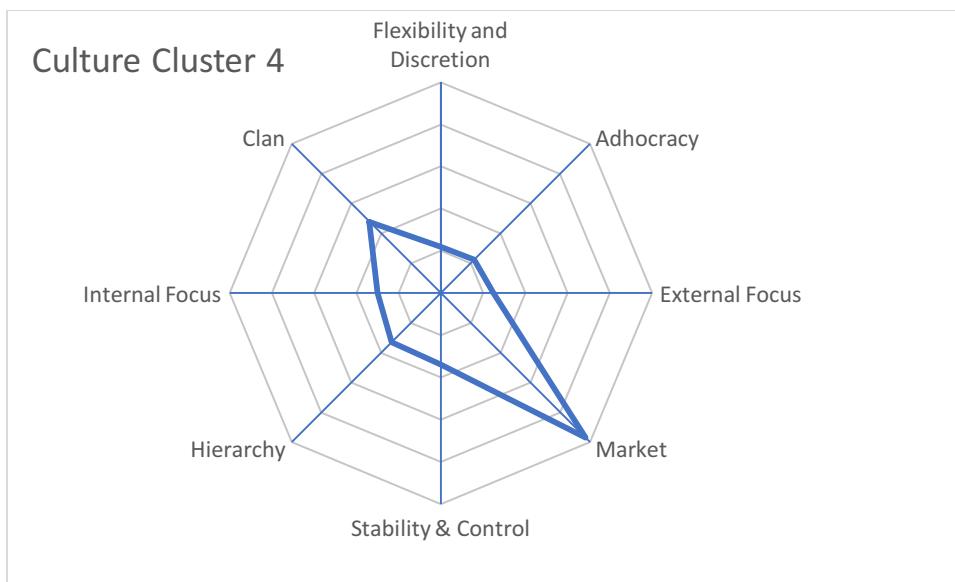
Culture cluster 3: Amongst the 5 clusters, this cluster was significantly higher along the external dimension – Adhocracy and Market. This was the same result within the cluster. The ANOVA analysis found this cluster was not significantly higher than the other clusters in any one culture type, but it did score highly on the Adhocracy and Markets cultures. Based on these analyses, this cluster is referred to as the ‘Externally oriented’ cluster.

FIGURE 5.6 EXTERNALLY ORIENTED CLUSTER PROFILE



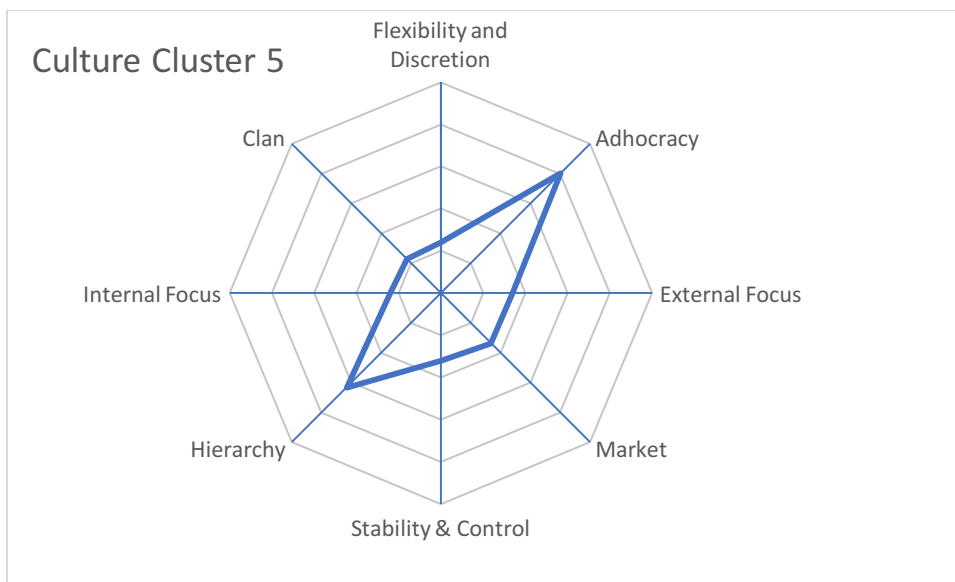
Culture Cluster 4: This fourth cluster scored significantly high on Clan, Adhocracy and Hierarchy culture types. Within the cluster, the most significant cultures were Clan and Market. The ANOVA showed the cluster distinguishing with other clusters on the Clan culture type. Because this cluster somehow distinguishes itself in every culture type, I refer to this cluster as the ‘Balanced’ cluster.

FIGURE 5.7 BALANCED CLUSTER PROFILE



Culture Cluster 5: The final cluster showed significantly high values for Hierarchy, Adhocracy and Clan types as compared to the other clusters. Within the cluster, the Adhocracy and Hierarchy culture types were most significant. Using ANOVA, the Adhocracy culture type was most significant. Based on these analyses, I refer to this cluster as ‘Flexible with some Stability’.

FIGURE 5.8 FLEXIBLE WITH SOME STABILITY CLUSTER PROFILE



5.3.2 Culture and Practice Clusters

The various culture profiles were then tested alongside the SB practice clusters, to determine whether there were any associations between them. A crosstabs comparison was done using chi squared values to recognize any culture clusters that were dominant in the practice clusters.

The pairing results of the analyses are shown in table 5.8.

TABLE 5.8 CROSSTABS – PRACTICE & CULTURE CLUSTERS

Practice_Clusters * Cluster Number of Case Crosstabulation			Cluster Number of Case					Total					
Practice_Clusters			1	chi	2		3		4		5		
1.00	Count		10.00	0.29	5.00	0.40	5.00	0.12	8.00	0.40	1.00	0.01	29
	Expected Count		11.86		3.77		5.84		6.40		1.13		29.0
	% within Practice_Clusters		34%		17%		17%		28%		3%		100%
2.00	Count		20.00	2.25	8.00	2.63	3.00	2.32	3.00	2.89	1.00	0.10	35
	Expected Count		14.32		4.55		7.05		7.73		1.36		35.0
	% within Practice_Clusters		57%		23%		9%		9%		3%		100%
3.00	Count		5.00	0.91	1.00	0.00	0.00	1.61	2.00	0.03	0.00	0.31	8
	Expected Count		3.27		1.04		1.61		1.77		0.31		8.0
	% within Practice_Clusters		63%		13%		0%		25%		0%		100%
4.00	Count		8.00	2.24	3.00	0.39	7.00	0.02	14.00	6.19	1.00	0.06	33
	Expected Count		13.50		4.29		6.64		7.29		1.29		33.0
	% within Practice_Clusters		24%		9%		21%		42%		3%		100%
5.00	Count		12.00	0.00	0.00	3.77	14.00	11.41	2.00	3.03	1.00	0.01	29
	Expected Count		11.86		3.77		5.84		6.40		1.13		29.0
	% within Practice_Clusters		41%		0%		48%		7%		3%		100%
6.00	Count		2.00	0.08	1.00	0.06	0.00	1.21	2.00	0.34	1.00	2.51	6
	Expected Count		2.45		0.78		1.21		1.32		0.23		6.0
	% within Practice_Clusters		33%		17%		0%		33%		17%		100%
7.00	Count		5.00	0.20	1.00	0.07	2.00	0.00	2.00	0.02	0.00	0.39	10
	Expected Count		4.09		1.30		2.01		2.21		0.39		10.0
	% within Practice_Clusters		50%		10%		20%		20%		0%		100%
8.00	Count		1.00	0.25	1.00	0.44	0.00	0.81	1.00	0.02	1.00	4.57	4
	Expected Count		1.64		0.52		0.81		0.88		0.16		4.0
	% within Practice_Clusters		25%		25%		0%		25%		25%		100%
Total	Count		63.00		20.00		31.00		34.00		6.00		154
	Expected Count		63.00		20.00		31.00		34.00		6.00		154.0
	% within Practice_Clusters		41%		13%		20%		22%		4%		100%

Some Practice and Culture clusters appear to be significantly related, with some connections stronger than others. SB Practice Clusters 5 & 6 had the weakest relationships to the corresponding Culture clusters.

TABLE 5.9 SB PRACTICES & CULTURE CLUSTER ASSOCIATIONS

SB Practice Cluster	Culture Cluster
PC1: Minimalist	none
PC2: Preventative	CU1: Market
PC2: Preventative	CU2: Stable
PC3: Receptive	none
PC4: Responsive	CU1: Market
PC4: Responsive	CC4: Balanced
PC5: Beginner	CU3: Externally oriented
PC6: Proactive	CU5: Flexible with some Stability
PC7: Integrative	none
PC8: Adaptive	CU5: Flexible with some Stability

First off, there are some SB practice clusters that were not paired off. These were the Compliant, the Receptive, and the Integrative. The Compliant cluster is one of the lower performing clusters, doing the bare minimum to be compliant and to cut costs. The Receptive falls somewhere in the middle, focusing on internal eco-efficiencies and monitoring and reporting. The Integrative is one of the highest performing clusters, with a strong Internal business strategy and several other all-rounded high performing practices. These clusters all have similar performing clusters (low, mid and high), and this may be the reason why they were not paired off with any culture clusters.

Preventative with Market and Stability: To recall, the Preventative cluster performed well in Product and Process sustainability strategies, but poorly in the Supply chain, Finance & Risk and Health & Safety. As was mentioned previously, the low scores in Finance & Risk and Health & Safety may just be a result of the nature of the reports. CSR reports generally do not contain much financial data, and Health and Safety might be more of a ‘personal’ internal issue, rather than a topic mentioned in the CSR. Bureaucratic cultures value efficiency, process control, and goal achievement and this is exactly what this cluster of organizations performs well on. The Preventative cluster is found mostly in the Automotive, Chemicals, Equipment and Paper sectors. These are all fairly large, highly automated, precision-based industries, and it makes sense that we would see more Stable or Bureaucratic cultures in this cluster. The Market culture is expected to be dominant in most cultures, just because the CSR report is by its nature, an externally focused, market based report. Therefore, one would expect a lot of the language would demonstrate a market culture.

Responsive with Market and Balanced: The Responsive cluster is the ‘balanced’ cluster and also does well on Internal Business Strategies. They have an overall good sustainability strategy that focuses on many aspects, and perform well-enough on all. It makes perfect sense that this set of organizations, also have the most ‘balanced’ culture as well. They seem to understand the importance of elements of culture, as well as sustainability strategies, and move to adopt elements of all. As mentioned previously, the market culture is expected to show highly for all organizations in the sample, because of the CSR report. However, the Responsive cluster does seem to allow for learning, and obtaining feedback from customers and other stakeholders may be an important part of their strategy – which is a characteristic of a market culture.

Beginner with Externally Oriented: The Beginner cluster performs well on Developing World, Finance and Risk, and Health and Safety SB practices, and some of these could be explained by external factor such as the type of report, and the sector. Within the cluster the next high set of practices were Product & Process, Internal Business Strategies, Ethics and External Orientation. The externally oriented dimension values innovation, profitability and customer focus. These values are all predominant in the SB practices focused on in the Beginner cluster. The Product & Process and Internal Business Strategies are both internally focused innovation based strategies. These are directed at finding ways to reduce material and energy use, while at the same time reducing wastes. This is also tied with the value of profitability for this culture type. The concentration on Finance and Risk may be due to the report type but it can also be based on this culture type's focus on profitability and market share. The Beginner cluster also focuses on customers and external stakeholders which is also a value of Externally Oriented cultures.

Proactive with Flexible with some stability: This was one of the weaker pairs. The Proactive cluster implements long-lasting and strategic changes towards sustainability, and also very effectively monitors, tracks and reports their progress. They also perform well in all other SB practice categories. Commitment, people development, and innovation are valued within the Flexibility dimension, and this seems inherent in the Proactive cluster, as they adopt and perform well in all SB practices. To perform well at such a diverse set of practices implies some level of innovativeness, and a commitment from employees and management to be successful. The Proactive cluster also has some elements of a hierarchical cluster, which values consistency and efficiency. These values are demonstrated in the very successful

implementation of the Monitoring and Reporting SB practices, as well as other efficiency based practices.

Adaptive with Flexible with some stability. This was one of the weaker connections. The Adaptive cluster demonstrates the ability to be flexible and adapt to the demands of the complex supply chains that they may be part of. They also score highly in the Monitoring and Reporting category and do well in many other categories. As mentioned previously, the Flexible with some stability culture cluster focuses on: commitment, people development, innovation, consistency and efficiency. The Adaptive cluster seems perfectly suited to be the 'Flexible' organization, and particularly one with a high Adhocracy culture. There is definitely a high level of innovation – having to keep up with the changing demands of the supply chain. The other qualities may be expressed in the other SB practices that had an average performance.

The results of the tests of hypotheses relating to culture and SB practice fit are shown in table 5.10

TABLE 5.10 TEST OF HYPOTHESES

Hypotheses	Culture Cluster	SB Practice Cluster	Sig test
H2a. Organizations with relatively high clan profiles will have high a higher than average adoption of Employee related SB practices	CC4 & CC2	PC6 & PC2	significant
H2b. Organizations with relatively high clan profiles will have high a higher than average adoption of Ethical SB practices	CC4 & CC2	PC6	not significant
H3a: Organizations with relatively high adhocracy profiles will have high a higher than average adoption of Externally oriented SB practices	CC5 & CC4 & CC3	PC7	not significant
H3b: Organizations with relatively high adhocracy profiles will have high a higher than average adoption of research and innovation SB practices	CC5 & CC4 & CC3	PC7 & PC6	significant
H3c: Organizations with relatively high adhocracy profiles will have high a higher than average adoption of Supply chain management SB	CC5 & CC4 & CC3	PC8	significant
H4a. Organizations with relatively high hierarchical profiles will have high a higher than average adoption of Compliance based SB practices	CC5 & CC4 & CC2	PC6	significant
H4b. Organizations with relatively high hierarchical profiles will have high a higher than average adoption of Prevention	CC5 & CC4 & CC2	PC7 & PC6 & PC3 & PC2	significant
H4c. Organizations with relatively high hierarchical profiles will have high a higher than average adoption of Financial & Risk related SB practices	CC5 & CC4 & CC2	PC5	not significant
H4d. Organizations with relatively high hierarchical profiles will have high a higher than average adoption of Monitoring and reporting related SB practices	CC5 & CC4 & CC2	PC8 & PC7	significant
Hypothesis 5a: Organizations with relatively high market profiles will have high a higher than average adoption of Product & Process/Resource and operational efficiency practices.	CC4 & CC3 & CC2 & CC1	PC7 & PC3 & PC2	significant
H5b: Organizations with relatively high market profiles will have high a higher than average adoption of externally oriented practices.	CC4 & CC3 & CC2 & CC1	PC7 & PC6 & PC3 & PC2	significant

5.3.3 Review of hypotheses

Looking through our previous hypotheses related to Culture and SB practice clusters, we see that a few of those were significant and related to the descriptions given above.

H2a. Organizations with relatively high clan profiles will have high a higher than average adoption of Employee related SB practices

This hypothesis was shown to be valid and significant. The Stable, Balanced and Flexible (with stability) clusters scored the highest in the Clan culture. The Proactive and Preventative clusters had the highest adoption of Employee related practices. The Preventative and Stable clusters were significantly related, as were the Proactive and Flexible (with stability) clusters.

H2b. Organizations with relatively high clan profiles will have high a higher than average adoption of Ethical SB practices

This hypothesis was found to be valid and significant. The Stable, Balanced and Flexible (with stability) clusters were the highest performers in the Clan culture. The practice cluster with the highest Ethics performance was the Proactive cluster. The Proactive cluster was found to be related to the Flexible (with some stability) cluster.

H3a: Organizations with relatively high adhocracy profiles will have high a higher than average adoption of Externally oriented SB practices

This hypothesis was found to be invalid. The culture clusters with the highest adhocracy profiles were the Flexible (with stability), Balanced and Externally Oriented clusters. The practice cluster with the highest performance in Externally oriented SB practices, Integrative, was not related significantly to any of these.

H3b: Organizations with relatively high adhocracy profiles will have high a higher than average adoption of research and innovation SB practices

This hypothesis was found to be valid and significant. The culture clusters with the highest adhocracy profiles were the Flexible (with stability), Balanced and Externally Oriented clusters. The practice clusters with the highest performance in Research and Innovation practices were the Integrative and Proactive clusters. The Proactive and Flexible (with stability) clusters were found to be related.

H3c: Organizations with relatively high adhocracy profiles will have high a higher than average adoption of Supply chain management SB practices

This hypothesis was found to be valid and significant. The culture clusters with the highest adhocracy profiles were the Flexible (with stability), Balanced and Externally Oriented clusters. The practice cluster with the highest performance in Supply chain management practices was the Adaptive cluster. The Adaptive cluster was found to be significantly related to the Flexible (with stability) culture profile.

H4a. Organizations with relatively high hierarchical profiles will have high a higher than average adoption of Compliance based SB practices

This hypothesis was found to be valid and significant. The culture clusters with the highest hierarchical profiles were the Flexible (with stability), Balanced and Stable clusters. The

Proactive cluster scored the highest in the Compliance based SB practices. It was shown that the Proactive cluster and the Flexible (with stability) clusters are significantly related.

H4b. Organizations with relatively high hierarchical profiles will have high a higher than average adoption of Prevention

This hypothesis was found to be valid and significant. The culture clusters with the highest hierarchical profiles were the Flexible (with stability), Balanced and Stable clusters. The Integrative, Proactive, Receptive and Preventative clusters scored the highest in the Preventative SB practices. The Proactive and Flexible (with stability) and the Preventative and Stable clusters, were found to be related.

H4c. Organizations with relatively high hierarchical profiles will have high a higher than average adoption of Financial & Risk related SB practices

This hypothesis was found to be invalid. The culture clusters with the highest hierarchical profiles were the Flexible (with stability), Balanced and Stable clusters. The practice cluster with the highest Financial & Risk scores was the Beginner cluster. This cluster was not found to be related to any of the high-performing hierarchical cultures.

H4d. Organizations with relatively high hierarchical profiles will have high a higher than average adoption of Monitoring and reporting related SB practices

This hypothesis was found to be valid and significant. The culture clusters with the highest hierarchical profiles were the Flexible (with stability), Balanced and Stable clusters. The Integrative and Adaptive practice clusters scored the highest in the Monitoring & Reporting categories. The Adaptive cluster was found to be significantly related to the Flexible (with stability) cluster.

Hypothesis 5a: Organizations with relatively high market profiles will have high a higher than average adoption of Product & Process/Resource and operational efficiency practices.

This hypothesis was found to be valid and significant. The culture clusters with the highest market profiles were the Balanced, Externally oriented, Stable and Market clusters. The practice clusters with high performance in Product & Process/Resource and operational efficiency practices were the Integrative, Receptive and Preventative clusters. The Preventative and Stable clusters were found to be significantly related.

H5b: Organizations with relatively high market profiles will have high a higher than average adoption of externally oriented practices.

This hypothesis was found to be valid and significant. The culture clusters with the highest market profiles were the Balanced, Externally oriented, Stable and Market clusters. The practice clusters with high performance in externally oriented practices were the Integrative, Proactive, Receptive and Preventative clusters. The Preventative and Stable clusters were found to be significantly related.

5.4. RQ3. If organizational culture and SB practices are aligned, will this result in higher financial performance?

Hypothesis 6a: *Organizations with alignment between organizational culture and SB practices, will perform better financially, as compared to organizations without alignment.*

For this last phase of the research, I test whether the financial performance of the ‘aligned’ organizations is statistically greater than that of the ‘non-aligned’ group. By aligned, I refer to the presence of some association or relationship between the culture and practice clusters, as determined by the preceding tests. Therefore, all organizations with the following combination of practice/culture clusters would be part of the ‘aligned’ group.

TABLE 5.11 ALIGNED CLUSTERS

SB Practice Cluster	Culture Cluster
PC2: Preventative &	CU1: Market
PC2: Preventative &	CU2: Stable
PC4: Responsive &	CU1: Market
PC4: Responsive &	CC4: Balanced
PC5: Beginner &	CU3: Externally oriented
PC6: Proactive &	CU5: Flexible with some Stability
PC8: Adaptive &	CU5: Flexible with some Stability

The ROA and ROE scores were calculated using financial data obtained from COMPUSTAT and CRSP databases. Financial data was found for only 58 of the organizations in the sample. 21 of those 58 fit the ‘alignment’ profile, leaving 37 in the non-aligned group.

TABLE 5.12. COMPANIES IN THE SB PRACTICE SAMPLE WITH AVAILABLE FINANCIAL DATA

PC Cluster	No of Companies with Fin. Data	% of cluster	Total Cluster size
PC1	11	38%	29
PC2	12	33%	36
PC3	3	38%	8
PC4	11	32%	34
PC5	10	32%	31
PC6	5	71%	7
PC7	7	70%	10
PC8	0	0%	4

I calculated the z-score for each organization compared to its industry average (industry average calculated from sample). In this way, I was able to compare the organization's ROA/ROE with its industry, which gives a better indication how a business is performing. Financial data for only 59 of the organizations were available. The companies with financial data were representative of the larger sample, and were scattered across the 8 practice clusters.

A performance variable was coded '1' & '2' with 1 corresponding to companies an alignment with culture and SB practices, and 2 represents companies with no alignment.

TABLE 5.13 GROUP STATISTICS FOR ALIGNED VS NON-ALIGNED GROUPS

Group Statistics					
Group		N	Mean	Std. Deviation	Std. Error Mean
z_scoreROA	1.0	21	-0.01288	1.241988	0.271024
	2.0	37	-0.04973	0.777648	0.127845
z_scoreROE	1.0	21	-0.15848	1.185177	0.258627
	2.0	37	0.11946	0.852483	0.140147

The results found the aligned group to have a slightly higher mean ROA when compared to the non-aligned group. This is not the case for ROE. The results show that the aligned group’s mean is slightly lower than that of the non-aligned group. ROA measures how efficiently management is using total assets to generate income. ROE measures how efficiently investments are generating income. A result such as this one may indicate that the aligned companies have greater investments from shareholders, and have not earned income from these investments as they are with their total assets. An independent samples t-test found no significant differences with the aligned and non-aligned groups. This finding invalidates our final hypothesis:

Hypothesis 6a: Organizations with alignment between organizational culture and SB practices, will perform better financially, as compared to organizations without alignment.

One limitation of this test was the small portion of the sample that could be tested. Only 58/158 (~37%) of the sample had financial data, and thus a smaller number of organizations were present within each ‘aligned-pair.’ Generating the financial data for the remaining organizations in the sample, may demonstrate different results.

6. DISCUSSION

6.1. Review of the Findings

6.1.1 SB Practice Clusters

SB practices are discussed quite extensively in the Business and Sustainability literature. 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. Firms that emphasize compliance issues in their CSR reports may be concerned only with meeting regulations and reducing liability costs, and these priorities 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 & 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 for this section, 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 & 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, I 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. I 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?

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

6.1.2 Organizational Culture and SB Practice Cluster Associations

(A) Organizational Culture Clusters

To answer this second research question, I first identified the cultural profiles of the organizations within the sample. The literature on organizational culture has been increasingly critical of the idea of culture ‘types’, and has been encouraging the use of organizational profiles or configurations in its stead. The Competing Values Framework (CVF) is a commonly used instrument in organizational culture research, and has been typically used as a typology instrument, though it has been discussed that a configurational or profile approach, using the CVF, would be a more beneficial tool (Hartnell, Chad A. et al. (2011)). The results of the culture clustering in this study demonstrated configural profiles of these organizations with high/low scores for multiple dimensions of cultural values. Only one cluster was very highly associated with one culture type, the rest were associated with at least two types. This was an interesting find which corroborates the recent discussions around culture types verses profiles.

In practice, organizations don’t neatly fit into one or the other quadrant; they have elements of all four culture types, usually with some leaning to one specific culture type. Even the most externally focused, profit driven company would have some concern for its employees and their development. The most innovative and flexible companies also contain some minimal level of hierarchy and set processes. Thus, in both theory and practice, we expected to find cultural profiles, and this is what was evidenced by this cluster analysis.

That said, even though we expect companies to have elements of all culture types, typically we see companies score highly on one end of the dimensions of organizational structure or focus.

That is, a company might do well in the ‘Stability’ dimension, with attributes across Hierarchy

and Market. Or a business might be well suited to the 'External' dimension, with high scores in Adhocracy and Market. An assumption of the CVF is that the two pairs of the latent dimensions located in opposite quadrants are not correlated, and are in fact competing values (Kalliath, Bluedorn, & Gillespie, 1999), implying that there are likely to be trade-offs between the two types. Research has found that companies who attempt to balance two opposing culture types (diagonally) usually struggle to find balance and create dissonance within the organization.

A very intriguing finding coming out of this work, is that two of the culture clusters demonstrated this diagonal, or 'competing-traits' culture. Cluster 4 – the 'Balanced' cluster and Cluster 5 – 'Flexible with some Stability' both reach diagonally across the CVF. The balanced cluster scored highest in Market (External and Stable) and Clan (Internal and Flexible) cultures whereas Cluster 5 scored highest in Adhocracy (External and Flexible) and Hierarchy (Internal and Stable). These are indicative of corporations who have found effective ways to balance these competing values and perhaps have high levels of organizational effectiveness.

(B) Culture and SB Practice Associations

The research found seven culture and SB practice associations. One of the more striking findings was the association of the highest-ranking SB practice clusters (Proactive & Adaptive) with one of the culture clusters that may be demonstrating high levels of organizational effectiveness. This was the 'Flexible with some stability' culture. Researchers have theorized that the 'ideal' culture profile for corporate sustainability will be high in Adhocracy, and low in internal process values (Linnenluecke, M. & Griffiths, A., 2010). To this researcher's knowledge, this has not been proven empirically. Thus, this finding is a first attempt to

understand whether a culture for sustainability is associated more with one culture type. While this is, on its own, a significant finding, much more research is needed to make any conclusions about sustainability culture. For one, there were other SB practice clusters, some high-performing ones, that did not associate with the culture clusters. It would therefore be useful to understand what the culture profiles of these high ‘sustainability’ performing companies are.

Equally interesting was that the lowest performing SB cluster (Beginner) with a culture association, was associated with the Externally oriented culture. The second lowest (Preventative) was associated strongly with the Market and Stable culture clusters. It is important to note that the Externally oriented cluster was significantly higher in the Market cluster (0.61) than the Adhocracy cluster (0.25). Thus, the finding here is that the Stable and particularly Market clusters, are generally associated with lower-performing SB practices. The Responsive cluster, which is in the bottom 50% of the SB practice clusters in performance, was also associated with the Market cluster. This association has not been examined in the literature, and it should definitely be an area for further consideration. It may be that the high focus on financial performance in a market culture has some effect on the organization’s focus on other sustainability criteria. The lowest performing SB practice cluster (Compliant) was not associated with any culture cluster, so it would be useful to identify the culture of the companies within that cluster.

6.1.3 SB Practice and Culture Cluster Alignment and Financial Performance

The final question in this paper brought in the variable of financial performance. The intent was to determine whether an alignment (association) with culture and SB practice clusters was

indicative of a more financially successful organization. The findings of this research were inconclusive with regards to this question. The primary reason being the dearth of financial data retrieved for the organizations in the sample. Only about 35% of the sample had available financial data.

This was an unfortunate limitation of the research, as a response to this question could have contributed significantly to the Business and Sustainability research. Understanding whether an alignment in practices and culture is predictive of performance, is an incredible finding that can change how businesses approach the adoption and implementation of SB practices. Another noteworthy question is the correlation between the SB practice clusters and financial performance. We have some indication how the clusters perform relative to each other on their focus on SB practices, and it would be fascinating to see how this result aligns with financial performance. Additionally, understanding which culture types are more financially successful, is also an intriguing question.

6.2 Limitations & Further Research

Researchers have considered bundles of management practices because of their synergistic abilities, and ability to form of high-quality strategies. This has however, not been applied to sustainable business practices. My research has taken the first step in empirically understanding how these bundles are adopted to create sustainability strategies. However, there were a few limitations that could be addressed through further research.

Firstly, the organizational culture research was very limited having been drawn from only CSR reports. Whilst the reports do give some indication of the organizational culture, a report made

for external stakeholders is going to have some inherent biases to some culture types. The findings can be expanded upon by utilizing different sources for determining the organizational culture. This could be other company documents: internal reports, website text etc. Having a broad and diverse set of sources will minimize the biases found in any one particular source.

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.

Another issue was that the lengths and types of CSR reports varied a bit. Some documents were over 200 pages long, while others were 10 pages long. While I did use the average influence score per code per document, this definitely gave an advantage to those companies who 'talk' more, to achieve higher scores in that code. The same can be said for the type of report. There were two main types of reports – those akin to a CSR, that is GRI, Corporate citizenship report, Environmental reports etc.; and there were Annual reports which include Integrated reports. The Annual and Integrated reports were generally the longer reports, and they reported on a wide range of aspects pertaining to the business. In one of the clusters, it was seen that the Finance and Risk SB practice category was very high scored when the Annual/Integrated reports were the majority. This suggests that the type of report does have some influence on the word scores, which may obscure the results. Future research should

look to isolating reports of the same kind to ensure that there is no bias feeding into the results.

Using this one data source to determine the two variables could have contributed to common method bias. This may have been reduced with the use of computerized text analysis, but this bias does need to be acknowledged.

Some of the other control variables, such as location and sector, seemed to weigh heavily in some of the SB practice clusters. It would be useful to understand how much of an impact these two variables have on the performance on SB practices, and also on organizational culture. If indeed, these contextual variables have a significant effect on the practices adopted, this would support configurational theory and the concept of equifinality.

It would also make sense to conduct a more in-depth study on organizations who are successful in achieving sustainability goals. It would be interesting to see which SB practices they have adopted and perform really well in, as well as identify their cultural profile. As seen in this research, I would expect many different successful sustainability strategies, which would again support configurational theory.

Regarding the organizational culture there are a few ways in which this research could be enhanced. Firstly, it is more typical to measure organizational culture using surveys or interviews. The aggregation of results for several company employees gives a relatively accurate measure of the company's culture or climate. For my research these methods were extremely difficult and costly to implement. I also found that content analysis was recently being used in other studies to identify an organization's culture. Having the CSR reports publically available presented an opportunity to further explore this method of analyzing culture. The downside is that a report to shareholders or to the Global Reporting Index would

generally follow some pre-prescribed format. This template may dilute the ‘voice’ of this company’s culture, and include more externally-oriented text, or material that is very structured. In the research sample, I found the market culture to be extremely dominant, and it could be that it is an outcome of using content analysis on public-facing reports. Future work may seek to validate this claim, using one of the conventional methods to measure culture, and comparing it to the cultural profile brought out through the text analysis. This will be useful for future analyses of organizational culture, in light of increasing survey fatigue; the use of content analysis may significantly broaden a researcher’s ability to assess an organization’s culture.

Another complementary measure of organizational culture is that of culture strength. This is defined as the extent to which cultural values and beliefs are widely shared and strongly held throughout the organization (Linnenluecke, M. & Griffiths, A., 2010; O’Reilly & Chatman, 1996)). Studies have confirmed that a positive link exists between cultural strength and firm performance (Zammuto et al., 2000a). This study could benefit from using the additional variable of culture strength to determine if the degree to which the values are shared affects the link between SB practices and performance.

One very fascinating result of this work is the association between the high-performing SB practice clusters and one particular culture cluster. The opposite also rang true – with the lower performing SB clusters associated with a particular culture. This echo’s what has been theorized in the literature, and definitely presents an opportunity to explore what a ‘culture for sustainability’ might look like, or conversely, what it doesn’t look like.

This research did not include financial information for about 65% of the sample. This lack of data may have significantly affected the concluding test that compared the non-aligned clusters to the aligned clusters. Only 13% of the entire sample was included in the aligned group, and 23% in the non-aligned group. These small groups may be too small a part of the population to make any generalizations about the results. Thus, future work should obtain the financial data for most of the sample, to ensure meaningful results. It would also be useful to examine whether there is any correlation between the SB practice clusters and financial performance as well as the culture clusters and financial performance.

Finally, an original research endeavor was to determine some measure of sustainability performance. The intention was to analyze reports, company websites, and general websites, to identify meaningful indicators of progress or failure on some sustainability outcome. This task proved very difficult and time-consuming, thus it was decided to use financial performance as a signal of organizational effectiveness. Implementing sustainability practices has been linked to positive financial performance so there was some validation to use this variable. Future research should explore this area of measuring sustainability performance. If we are able to directly link culture/SB practice alignment to sustainability performance, we could see a change in the way businesses adopt and implement SB practices. This could have significant implications for corporate sustainability.

6.3 Contributions

One of the goals of this research was to uncover bundles of sustainability practices that work simultaneously to create an effective sustainability strategy. The results were eight bundles (or

clusters) that were most prominent in the sample organizations. Some organizations had more complete bundles, while some concentrated on specific practices that were related to their region or sector or their commitment to sustainability. The results portrayed a spectrum of organizations, from those concerned with compliance and cost-minimization, to those working to change internal company culture towards sustainability.

The major finding from this first analysis, was the identification of similarly well-performing clusters, who differentiated from each other based on their high-performing SB practices categories. This finding supported configuration theory and the concept of equifinality which proposes that organizations have different means by which to achieve the same level of success. This finding is significant because it dispels the myth that there is one path to sustainability, or a one-size-fits all approach to adopting sustainability strategies.

A second goal of the research was to uncover associations between SB practices and organizational culture. While there were several interesting results in this set of analyses, the most significant was the association of the higher-performing SB clusters to the Adhocracy with some stability culture. This result is very significant because it is the first attempt at empirically testing this theoretical assumption. It presents a first look into what a culture for sustainability might look like, and though this would benefit greatly from further research and analysis, it is still a very note-worthy finding.

The final part of the research set out to examine whether the association between SB practices and organizational culture was somewhat predictive of financial performance. This was the most limited section of the research, with very little of the sample having available financial data. No conclusions were able to be drawn, as a result of this dearth in financial data.

However, this still remains an extremely important and significant question, and this is quite possibly the first, next step for this researcher.

6.4 Conclusions

World production and consumption have reached incredibly high levels. One half of the planet lives on less than \$2 a day, while one-fifth of the planet owns four-fifths of global wealth, and contributes to the increasing mounds of waste, pollution, and overexploitation of our natural resources. Businesses have the unique ability to affect change in all of these areas with negative impacts. If corporations emphasized the need to protect and restore our natural environment, as well be part of the solution for some of our societal problems, we would make great strides in achieving global sustainability.

Generally, it is in an organization's interest to pursue some sustainability strategy. It offers them the ability to save money by utilizing less resources, less energy and water, and generate less waste. Companies also benefit from the competitive advantages to be had when promoting their commitment to protecting the environment, or contributing positively to society. But researchers and involved stakeholders have considered business sustainability efforts to be minimal and intended purely for marketing or cost-savings purposes. Whilst this statement may have some degree of truth in it, businesses have been handed an incredibly difficult task of 'deciding' what corporate sustainability should look like. The lack of guidance in the corporate sustainability space, has contributed to varying descriptions, definitions and concepts related to corporate sustainability. Even with sustainability standards, there is a disconnect to the broader sustainability goals, and so small and incremental changes are the

norm rather larger, more meaningful sustainability targets.

There were so many interesting and significant findings in this study, and all have some implications on the Business and Sustainability literature, as well as on industry. If it is indeed true that several paths exist to successful sustainability performance, and we can determine how much different contextual factors affect this performance, this can completely change the way in which businesses determine their sustainability strategies. We have also opened the door to understanding what a culture for sustainability may or may not look like – giving businesses some sort of guidance to work towards.

The Business and sustainability literature suffers from a lack of empirical research in exposing what true sustainability might look like within an organization, and this work is a first step in paving the way to achieve this.

REFERENCES

- Aldenderfer, M. S., & Blashfield, R. K. (1984). *Cluster analysis*. Beverly Hills, CA: Sage.
- Bansal, P., & Roth, K. (2000). Why Companies go green: A model of Ecological Responsiveness. *The Academy of Management Journal*, 43(3), 717-736.
- Bansal, P. C., I. . (2004). Talking trash: legitimacy, impression management and unsystematic risk in the context of the natural environment. . *Academy of Management Journal*, 47, 93-103.
- Barley, S., & Kunda, G. (1992). Design and devotion: Surges of rational and normative ideologies of control in managerial discourse. . *Administrative Science Quarterly*, 37(3), 363-399.
- Barthel, P., & Ivanaj, V. (2006). Is Sustainable Development in Multinational Enterprises a Marketing Issue? *The Multinational Business Review*, 15(1), 67-87.
doi:<http://dx.doi.org/10.1108/1525383X200700004>
- Basile, G., Broman, G., & Robert, K.-H. (2011). Being Strategic about Sustainability. In S. G. McNall, J. C. Hershauer, & G. Basile (Eds.), *The Global Supply Web* (Vol. 2). Santa Barbara, California: Praeger.
- Berchicci, L., & King, A. (2007). Postcards from the Edge: A Review of the Business and Environment Literature. *Academy of Management Annals*, 1(1), 513-547.
- Billis, D. (2010). *Hybrid Organisations and the Third Sector*. Palgrave Macmillan.
- Boyd, B., Henning, N., Reyna, E., Wang, D. E., & Welch, M. D. (2009). *Hybrid Organizations: new business models for environmental leadership*. Sheffield, UK: Greenleaf Publishing.
- Brown, B., Hanson, M., Liverman, D., & Merideth, R. (1987). Global Sustainability: Towards Definition. *Environmental Management*, 11(6), 713-719.
- Brown, L. (1981). *Building a sustainable society*. New York: W.W. Norton.
- Brundtland, G. H., & WCED. (1987). *Our common future*. Oxford: Oxford University Press.
- Cable, D., & Judge, T. (1997). Interviewers' perceptions of person-organization fit and organizational selection decisions. . *Journal of Applied Psychology*, 82, 546-561.
- Cameron, K. S., Quinn, R. E., DeGraff, J., & Thakor, A. V. (2006). *Competing values leadership: Creating value in organizations*. Northampton, MA: Elgar.
- Carley, K. M., & Kaufer, D. M. (1993). Semantic connectivity: An approach for analyzing symbols in semantic networks. *Communication Theory*, 3(183-213).

- Carroll, A. (1979). A Three-Dimensional Conceptual Model of Corporate Performance *The Academy of Management Review*, 4(4), 497-505.
- Carroll, A. B. (1979). A three dentional conceptual model of corporate social performance. *Academy of Management Review*, 4, 497-505.
- Chabowsky, B. R., Mena, J. A., & Gonzales-Padron, T. L. (2011). The structure of sustainability research in marketing, 1958-2008: a basis for future research opportunities. *Journal of the Academy of Marketing Science*, 39(1), 55-70. doi:<http://dx.doi.org/10.1007/s11747-010-0212-7>
- Corman, S., Kuhn, T., McPhee, R., & Dooley, K. (2002). Studying complex discursive systems: Centering resonance analysis of organizational communication. *Human Communication Research*, 28(2), 157-206.
- Cotgrove, S. (1982). *Catastrophe or cornucopia: The environment, politics, and the future*. Chichester, UK: Wiley.
- Crane, A. (2000). Corporate greening as amoralization. *Organization Studies*, 21(4), 673–696.
- Crane, A. (2000). Corporate Greening as Amoralization. *Organization Studies*, 21(4), 673-696. doi:10.1177/0170840600214001
- Crane, A., Matten, D., & Spence, L. J. (2008). *Corporate social responsibility: Readings and cases in a global context*. London: Routledge.
- Daily, B. F., & Huang, S. (2001). Achieving sustainability through attention to human resource factors in environmental management. . *International Journal of Operations & Production Management*, 21(12), 1539–1552.
- Danowski, J. A. (Ed.) (1993). *Network analysis of message content* (Vol. 12). Norwood, NJ: Ablex.
- Dasmann, R. (1985). An introduction to world conservation. In F. T. a. H. Field (Ed.), *Sustaining tomorrow*. Hanover, New Hampshire: University Press of New England.
- Denison, D., & Spreitzer, G. (1991). Organizational culture and organizational development: A competing values approach. . In W. Woodman & W. A. Pasmore (Eds.), *Research in Organizational Change and Development* (pp. 1-21). Greenwich, CT: JAI Press.
- Dias-Sardinha, I., & Reijnders, L. (2001). Environmental performance evaluation and sustainability performance evaluation of organizations: an evolutionary framework. *Eco-Management and Auditing*, 8(2), 71-79. doi:10.1002/ema.152
- DiMaggio, P., & Powell, W. (1983). The iron cage revisited: Institutional iso- morphism and collective rationality in organizational fields. . *American Sociological Review*, 48(2), 147-160.

- Dos Santos, M. A. O., Svensson, G., & Padin, C. (2013). Indicators of sustainable business practices: Woolworths in South Africa. *Supply Chain Management*, 18(1), 104-108.
- Doty, D. H., Glick, W. H., & Huber, G. P. (1993). Fit, equifinality, and organizational effectiveness: A test of two configurational theories. *Academy of Management Journal*, 36(6), 1196.
- Dueholm Müller, S., & Axel Nielsen, P. (2013). 'Competing values in software process improvement: A study of cultural profiles'. *Information Technology & People*, 26(2), 146-171. doi:10.1108/itp-03-2013-0052
- Dunphy, D. C., Griffiths, A., & Benn, S. (2007). *Organizational change for corporate sustainability: a guide for leaders and change agents of the future* (2nd ed ed.). New York: Routledge.
- Dyllick, T., & Hockerts, K. (2002). Beyond the business case for corporate sustainability. *Business Strategy and the Environment*, 11, 130-141.
- Egri, C. P., & Pinfield, L. T. (1996). Organizations and the biosphere: Ecologies and environments. In C. H. S. Clegg, & W. R. Nord (Ed.), *Handbook of organization studies* (pp. 459-482). London: Sage.
- Elkington, J., & Hartigan, P. (2008). *The power of unreasonable people: How social entrepreneurs create markets that change the world*. Boston, Mass: Harvard Business School Press.
- Fineman, S. (1997). Constructing the green manager. *British Journal of Management*, 8(1), 31-38.
- Fombrun, C., & Shanley, M. (1990). What's in a name? Reputation building and corporate strategy. *Academy of Management Journal*, 33(2), 233-258.
- Franz, R. S. (2012). Role of business: a portfolio model of corporate social responsibility. *Journal of Global Responsibility*, 3(1), 83-110.
- Freeman, L. C. (1979). Centrality in social networks: Conceptual clarification. *Social Networks*, 1(215-213).
- Gallagher, D. R. (nd). Building EMS's focused on Sustainability: The Influence of Employees, Company Leaders & External Stakeholders.
- Gao, J. (2009). *The Evolution of business sustainability: Historical trajectory and structural relationships*. (PhD), The University of Western Ontario, Library Archives Canada.
- García-Castro, R., Aguilera, R. V., & Ariño, M. A. (2013). Bundles of Firm Corporate Governance Practices: A Fuzzy Set Analysis. *Corporate Governance: An International Review*, 21(4), 390-407. doi:10.1111/corg.12024
- Garzella, S., & Fiorentino, R. (2013). An integrated framework to support the process of green management adoption. *Business Process Management Journal*, 20(1), 68-89.

- Gibson, R. B. (2006). Sustainability Assessment: Basic components of a practical approach. *Impact Assessment and Project Appraisal*, 24(3), 170-182.
- Gladwin, T. (1992). The meaning of greening: A plea for organizational theory. In K. F. a. J. Schot (Ed.), *Environmental Strategies for Industry* (pp. 37-62). Washington, DC: Island Press.
- Gregory, K. (1983). Native view paradigms: Multiple cultures and culture conflicts in organisations. *Administrative Science Quarterly*, 28, 359-376.
- Grosz, B. J., Weinstein, S., & Joshi, A. K. (1995). Centering: A framework for modeling the local coherence of a discourse. *Computational Linguistics*, 21, 203-225.
- Guest, D., & Conway, N. (2004). Using sequential tree analysis to search for 'bundles' of HR practices. *Human Resource Management Journal*, 14(1), 79-96.
- Hansla, A., Gamble, A., Juliusson, A., & Gärling, T. (2008). The relationships between awareness of consequences, environmental concern, and value orientations. *Journal of Environmental Psychology*(28), 1-9.
- Hardjono, T. W., & Van, M., M. . (2001). The Social Dimensions of Business Excellence. *Corporate Environmental Strategy*, 8(3), 223-233. doi:[http://dx.doi.org/10.1016/S1066-7938\(01\)00125-7](http://dx.doi.org/10.1016/S1066-7938(01)00125-7)
- Harris, L. C., & Crane, A. (2002). The greening of organizational culture: Management reviews on the depth, degree and diffusion of change. *Journal of Organizational Change Management*, 15(3), 214-234.
- Hart, S. (1994). How green production might sustain the world. *Journal of the Northwest Environment*(10), 4-14.
- Hart, S. (1995). A Natural-Resource-Based View of the Firm. *The Academy of Management Review*, 20(4), 986-1014.
- Hart, S. L. (1995). A natural-resource-based view of the firm. *Academy of Management Journal*, 37, 986- 1014.
- Hart, S. L. (1995). A Natural-Resource-Based View of the Firm. *The Academy of Management Review*, 20(4), 986-1014.
- Hart, S. L. (2011). A Natural resource based view of the firm: Fifteen years after. *Journal of Management*, 37(5), 1464-1479.
- Hart, S. L., & Milstein, M. B. (1999). Global sustainability and the creative destruction of industries. *Sloan Management Review*, 41 (1), 22-23.

- Hart, S. L., Milstein, M. B., & Caggiano, J. (2003). Creating sustainable value. *Academy of Management Executive*, 17(2), 56-69.
- Hartnell, C. A., Ou, A. Y., & Kinicki, A. (2011). Organizational culture and organizational effectiveness: a meta-analytic investigation of the competing values framework's theoretical suppositions. *J Appl Psychol*, 96(4), 677-694. doi:10.1037/a0021987
- Hartnell, C. A., Ou, A. Y., & Kinicki, A. (2011). Organizational Culture and Organizational Effectiveness: A Meta-Analytic Investigation of the Competing Values Framework's Theoretical Suppositions. *Journal of Applied Psychology*. doi:10.1037/a0021987
- Hatch, M. J. (1993). The dynamics of Organizational Culture. *The Academy of Management Review*, 18(4), 657-693.
- Henriques, I., & Sadorsky, P. (1999). The Relationship Between Environmental Commitment and Managerial Perceptions of Stakeholder Importance. *Academy of Management Journal*, 42(1), 87-99.
- Hillman, A. J., & Keim, G. D. (2001). Shareholder value, stakeholder management and social issues: What's the bottom line? *Strategic Management Journal*, 42(4), 351-371.
- Hunt, C. B., & Auster, E. R. (1990). Proactive environmental management: Avoiding the toxic trap. . *Sloan Management Review*, 31(2), 7-18.
- Jennings, P. D., & Zandbergen, P. A. (1995). Ecologically sustainable organisations: An institutional approach. *Academy of Management Review*, 20(4), 1015.
- Jones, R., Jimmieson, N., & Griffiths, A. (2005). The impact of organizational culture and reshaping capabilities on change implementation success: The mediating role of readiness for change. . *Journal of Management Studies*, 42(2), 359–384.
- Jovane, F., Yoshikawa, H., Alting, L., Boë'r, C. R., Westkamper, E., Williams, D., . . . Paci, A. M. (2008). The incoming global technological and industrial revolution towards competitive sustainable manufacturing. *CIRP Annals - Manufacturing Technology*, 57, 641-659.
- Kalliath, T. J., Bluedorn, A. C., & Gillespie, D. F. (1999). A Confirmatory Factor Analysis of the Competing Values Instrument. *Educational and Psychological Measurement*, 59(143). doi:10.1177/0013164499591010
- Kanwa, A., Kumar, A., & Priyanka, S. (2011). Green Business Practices. *Economic Challenger*.
- Katz, D., & Kahn, R. (1978). *The social psychology of organizations* (2nd ed.). New York: Wiley.
- Kleiner. (1991). What does it mean to be green? *Harvard Business Review*, 69(5), 38-47.

- Kolk, A. (2003). Trends in Sustainability Reporting by the Fortune Global 250. *Business Strategy and the Environment*, 12(5), 279-291.
- Kuhn, T., & Corman, S. R. (2003). The emergence of homogeneity and heterogeneity in knowledge structures during a planned organizational change. *Communication Monographs*, 70(3).
- Lee, K.-H. (2012). Linking stakeholders and corporate reputation towards corporate sustainability. *International Journal of Innovation and Sustainable Development*, 6(2), 219-235. doi:<http://dx.doi.org/10.1504/IJISD.2012.046947>
- Linnenluecke, M., & Griffiths, A. (2010). Corporate sustainability and organizational culture. *Journal of World Business*, 45(4), 357-366. doi:10.1016/j.jwb.2009.08.006
- Linnenluecke, M., & Griffiths, S. (2010). Corporate Sustainability and Organisational Culture. *Journal of World Business*, 45, 357-366.
- Linnenluecke, M. K., & Griffiths, A. (2010). Corporate sustainability and organizational culture. *Journal of World Business*, 45(4), 357-366. doi:10.1016/j.jwb.2009.08.006
- Linnenluecke, M. K., Russell, S. V., & Griffiths, A. (2009). Subcultures and sustainability practices: the impact on understanding corporate sustainability. *Business Strategy and the Environment*, 18(7), 432-452. doi:10.1002/bse.609
- Louis, M. (1985). *An investigator's guide to workplace culture* (M. Louis Ed.). Beverly Hills, CA: Sage.
- Louis, M. R. (1983). Organisations as culture bearing milieux. In L. R. Pondy, P. J. Frost, G. Morgan, & T. C. Dandridge (Eds.), *Organisational symbolism*. Greenwich, CT: JAI Press.
- Marlow, D. R., Moglia, M., Beale, D. J., & Stenstromer, A. (2012). Embedding sustainability into a utility's business culture. *American Water Works Association*, 104(2), 51.
- Martin, J., & Siehl, C. (1983). Organisational culture and counterculture: An uneasy symbiosis. *Organisational Dynamics*, 12(2), 52-64.
- McDonough, W., & Braungart, M. (2002). *Cradle to cradle: Remaking the way we make things*. New York: North Point Press.
- McPhee, R., Corman, S., & Dooley, K. (2002). Organizational knowledge expression and management: Centering resonance analysis of organizational discourse. *Management Communication Quarterly*, 16(2), 130-136.
- Meyer, A. D., Tsui, A. S., & Hinings, C. R. (1993). Configurational Approaches to Organizational Analysis. *The Academy of Management Journal*, 36(3), 1175-1195.

- Meyerson, D. (1991a). "Normal" ambiguity? In P. Frost, L. Moore, M. Louis, C. Lundberg, & J. Martin (Eds.), *Reframing organisational culture* (pp. 31-144). Newbury Park, CA: Sage.
- Meyerson, D. (1991b). Acknowledging and uncovering ambiguities in cultures. In P. Frost, L. Moore, M. Louis, C. Lundberg, & J. Martin (Eds.), *Reframing organisational culture* (pp. 254-270). Newbury Park, CA: Sage.
- Meyerson, D., & Martin, J. (1987). Cultural change: An intergration of three different views. *Journal of Management Studies*, 24, 623-647.
- Miller, E. J., & Rice, A. K. (1967). *Systems of organization: The control of task and sentient boundaries*. London: Tavistock.
- Mittal, R., Gupta, S., & Pareek, S. (2013). Pressures, Practices & Performance of Green Supply Chain. *Interdisciplinary Journal of Contemporary Research in Business*, 5(5), 472-487.
- Montabon, F., Sroufe, R., & Narasimhan, R. (2007). An examination of corporate reporting, environmental management practices and firm performance. *Journal of Operations Management*, 25(5), 998-1014. doi:10.1016/j.jom.2006.10.003
- NDEMS, N. D. o. E. M. S. (2003). *Environmental management systems: Do they improve environmental performance?* Retrieved from Chapel Hill, N.C:
- Neuendorf, K. (2002). *The Content Analysis Handbook*: Sage Publications.
- O'Reilly, C. A., & Chatman, J. A. (1996). Culture as Social Control: Corporations, cults and commitment. *Organizational Behavior*, 18, 157-200.
- Orlitzky, M. (2006). Links between corporate social responsibility and corporate financial performance: Theoretical and empirical determinants. In J. Allouche (Ed.), *Corporate Social Responsibility* (Vol. 2: Performances and stakeholders, pp. 41-64). London: Palgrave Macmillan.
- Ostroff, C., Kinicki, A. J., & Muhammad, R. S. (2013). Organizational Culture and Climate. In N. S. S. Highhouse (Ed.), *Handbook of Psychology* (Vol. 12): Wiley & Sons.
- Ostroff, C., Kinicki, A. J., & Tamkins, M. M. (2003). Organizational Culture and Climate *Handbook of Psychology* (Vol. 22, pp. 565–593).
- Ostroff, C., & Schulte, M. (2014). A Configural Approach to the study of Organizational Culture and Climate. In K. M. B. Benjamin Schneider (Ed.), *The Oxford Handbook of Organizational Climate and Culture* (pp. 532-552): Oxford University Press.
- Parker, R., & Bradley, L. (2000). Organizational culture in the public sector: Evidence from six organizations. *International Journal of Public Sector Management*, 13(2), 125-141.

- Pedersen, J. S., & S., S. J. (1989). *Organisational culture in theory and practice*. Aldershot, England: Avebury & Grower.
- Perotti, S., Zorzini, M., Cagno, E., & Micheli, G. J. L. (2012). Green supply chain practices and company performance: the case of 3PLs in Italy. *International Journal of Physical Distribution & Logistics Management*, 42(7).
- Pfeffer, J., & Salancik, G. (1978). *The external control of organizations: A resource dependence perspective*. . New York: Harper & Row.
- Porter, M. E., & Linde, C. v. d. (1995). Green and competitive: Ending the stalemate. *Harvard Business Review*, 73, 120-134.
- Post, J. E., & Altman, B. W. (1994). Managing the environmental change process: Barriers and opportunities. *Journal of Organizational Change Management*, 7(4), 64-81.
- Pullman, M. E., Maloni, M. J., & Carter, C. R. (2009). Food for thought: Social versus environmental sustainability practices and performance outcomes. *Journal of Supply Chain Management*, 45(4), 38-54.
- Quinn, & Rohrbaugh, J. (1983). A spatial model of effectiveness criteria: Towards a competing values approach to organizational analysis. *Management Science*(29), 363–377.
- Quinn, R. (1988). *Beyond rational management: Mastering the paradoxes and competing demands of high performance*. San Francisco, CA: Jossey-Bass.
- Quinn, R., & Kimberly, J. (1984). Paradox, planning, and perseverance: Guidelines for managerial practice. . In J. R. Kimberly & R. E. Quinn (Eds.), *Managing organizational translations* (pp. 295-313). Homewood, IL: Dow Jones-Irwin.
- Rao, P., & Holt, D. (2005). Do green supply chains lead to competitiveness and economic performance? *International Journal of Operations & Production Management*, 25(9), 896-916. doi:10.1108/01443570510613956
- Robert, K.-H., Schmidt-Bleek, B., Aloisi de Larderel, J., Basile, G., Jansen, J. L., Kuehr, R., . . . Wackernagel, M. (2002). Strategic sustainable development — selection, design and synergies of applied tools. *Journal of Cleaner Production*, 10 197–214.
- Roome, N. (1992a). Developing environmental management strategies. *Business Strategy and the Environment*, 1(1), 11-24.
- Roome, N. (1992b). Developing environmental management systems. *Business Strategy and the Environment*, 1(1), 11-24.

- Russell, S. V., Haigh, N., & Griffiths, A. (2007). Understanding corporate sustainability: Recognizing the impact of different governance systems. In S. Benn & D. Dunphy (Eds.), *Corporate governance and sustainability* (pp. 36-56): Abington: Routledge.
- Russell, S. V., & McIntosh, M. (2011). Changing Organizational Culture for Sustainability. In N. M. Ashkanasy, C. P. M. Wilderom, & M. F. Peterson (Eds.), *The Handbook of Organizational Culture and Climate* (pp. 393-411): Sage Publications.
- Russell, S. V., & McIntosh, M. (2011). Changing Organizational Culture for Sustainability. In C. P. M. W. M. F. P. M. Ashkanasy (Ed.), *The Handbook of Organizational Culture and Climate* (pp. 393-411): Sage Publications. .
- Russo, M., & Fouts, P. (1997). A resource based perspective on corporate environmental performance and profitability. . *Academy of Management Journal*, 40(3), 534-559.
- Russo, M. V., & Fouts, P. A. (1997). A resource-based perspective on corporate environmental performance and profitability. *Academy of Management Journal*, 40(3), 534-559.
- Sarkis, J. (1998). Evaluating environmentally conscious business practices. *European Journal of Operational Research*, 107(1998), 159-174.
- Schein, E. (1990). Organisational Culture. *American Psychologist*, 45(2), 109-119.
- Schein, E. H. (1984). Coming to a new awareness of organisational culture. *Sloan Management Review*, 25(2), 2-17.
- Schein, E. H. (1992). *Organisational Culture and Leadership* (2nd ed.). San Francisco, CA: Jossey Bass.
- Schein, E. H. (2010). *Organizational culture and leadership*. San Francisco, CA: Jossey-Bass.
- Schmidheiny, S. (1992). *Changing course*. Cambridge, MA: MIT Press.
- Schneider, B., Ehrhart, M. G., & Macey, W. H. (2011). Organizational Climate Research: Achievements and the road ahead. In N. M. Ashkanasy, C. P. M. Wilderom, & M. F. Peterson (Eds.), *The Handbook of Organizational Culture & Climate* (pp. 29-49). Thousand Oaks, CA: Sage Publications Inc.
- Schwartz, H., & Davis, S. M. (1981). Matching corporate culture and business strategy. *Organizational Dynamics*, 10(1), 30-48.
- Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. In M. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 25, pp. 1-65). Orlando, FL: Academic Press.
- Scott, W. (2003). *Organizations: Rational, natural, and open systems*. . Upper Saddle

River, NJ: Prentice-Hall.

Seliger, G. (2007). *Sustainability in Manufacturing, Recovery of Resources in Product and Material Cycles*. Berlin/Heidelberg, New York, NY: Springer.

Senge, P. M., & Carstedt, C. (2001). Innovating our way to the: Next industrial revolution . *MIT Sloan Management Review*, 42(2), 24-38.

Senge, P. M., & Carstedt, G. (2001). Innovating our way to the next industrial revolution. *MIT Sloan Management Review*, 42(2), 24-38.

Shah, R., & Ward, P. T. (2003). Lean manufacturing: context, practice bundles, and performance. *Journal of Operations Management*, 21(2003), 129-149.

Shah, R., & Ward, P. T. (2003). Lean manufacturing: context, practice bundles, and performance. *Journal of Operations Management*, 21(2003), 129-149.

Sharma, S. (2002). Research in corporate sustainability: What really matters? . In S. Sharma & M. Starik (Eds.), *Research in Corporate Sustainability: The evolving theory and practice of organizations in the natural environment* (pp. 1-29). Cheltenham, UK: Edward Elgar.

Sharma, S., & Starik, M. (2003). *Research in Corporate Sustainability*. Boston: Edward Elgar Publishing.

Sharma, S., & Vredenburg, H. (1998). Proactive corporate environmental strategy and the development of competitively valuable organisational capabilities. *Strategic Management Journal*, 19(8), 729-753.

Sharma, S., & Vredenburg, H. (1998). Proactive corporate environmental strategy and the development of competitively valuable organizational capabilities. . *Strategic Management Journal*, 19, 729-753. doi:10.1002/(SICI)1097-0266(199808)19:8<729::AID-SMJ967>3.0.CO;2-4

Shrivastava, P. (1995). The Role of Corporations in Achieving Ecological Sustainability. *Academy of Management Review* Vol 20(4).

Sinclair, A. J., Diduck, A., & Fitzpatrick, P. (2008). Conceptualizing learning for sustainability through environmental assessment: critical reflections on 15 years of research. *Environmental Impact Assessment Review*, 28(7), 415-428.

Smircich, L. (1983). Concepts of culture and organizational analysis. *Administrative Science Quarterly*, 28(3), 339-358.

Solomon, A., & Lewis, L. (2002). Incentives and Disincentives for Corporate Environmental Disclosure. *Business Strategy and the Environment*, 11(3), 154-169.

- Sousa, R. S., & Voss, C. A. (2008). Contingency research in operations management practices. *Journal of Operations Management*, 26(6), 697-713.
- Starik, M., & Rands, G. P. (1995). Weaving an integrated web: Multilevel and multisystem perspectives of ecologically sustainable organisations. *Academy of Management Review*, 20(4), 908-935.
- Stavrou, E. T., & Brewster, C. (2005). The configurational approach to linking strategic human resource management bundles with business performance: Myth or reality? [Hampp, Mering]. *Management Revue*, 16(2), 186-201.
- Stead, J. G., & Stead, W. E. (2013). The Coevolution of Sustainable Strategic Management in the Global Marketplace. *Organization & Environment*, 26(2), 162-183. doi:10.1177/1086026613489138
- Stead, J. G., & Stead, W. E. (2013). The coevolution of sustainable strategic management in the global marketplace. *Organisation & Environment*, 26(2), 162-183.
- Stead, W. E., & Stead, J. G. (1992). *Management for a small planet: Strategic decision making and the environment*. Newberry Park, CA: Sage.
- Stead, W. E., & Stead, J. G. (1994). Can humankind change the economic myth? Paradigm shifts necessary for ecologically sustainable business. *Journal of Organizational Change Management*, 7(4), 15.
- Stocchetti, A. (2012a). The Sustainable firm: From principles to practice. *International Journal of Business and Management*, 7(21), 34-47.
- Stocchetti, A. (2012b). The Sustainable Firm: from Principles to Practice. *International Journal of Business and Management*, 7(21). doi:10.5539/ijbm.v7n21p34
- Stubbs, W., & Cocklin, C. (2008). Conceptualizing a "Sustainability Business Model". *Organization & Environment*, 21(2), 103-127. doi:10.1177/1086026608318042
- Tate, W. L., Ellram, L. M., & Kirchoff, J. F. (2010). Corporate Social Responsibility Reports: A Thematic Analysis Related To Supply Chain Management. *Journal of Supply Chain Management*, 46(1), 19-44.
- Thøgersen, J. (2006). Norms for environmentally responsible behaviour: An extended taxonomy. *Journal of Environmental Psychology*, 26, 247-261.
- Toh, S. M., & Morgeson, F. P. (2008). Human Resource Configurations: Investigating Fit With the Organizational Context. *Journal of Applied Psychology*, 93(4), 864-882.
- Toh, S. M., Morgeson, F. P., & Campion, M. A. (2008). Human resource configurations: investigating fit with the organizational context. *J Appl Psychol*, 93(4), 864-882. doi:10.1037/0021-9010.93.4.864

- Trice, H. M., & Beyer, J. M. (1984). Studying organizational cultures through rites and ceremonials. *Academy of Management Review*, 9(4), 653–669.
- Trist, E. (1981). The evolution of sociotechnical systems as a conceptual framework and as an action research program. In A. H. V. d. Ven & W. F. Joyce (Eds.), *Perspectives on organization design and behavior* (pp. 19-75). New York: Wiley.
- Turban, D. B., & Greening, D. W. (1997). Corporate social performance and organisational attractiveness to prospective employees. *Academy of Management Journal*, 40(3), 658-672.
- United Nations. (2013, 22 April 2013). Overview of the UN Global Compact.
- Van Maanen, J., & Barley, S. R. (1985). Cultural organisation: Fragments of a theory. In P. Frost, L. Moore, M. Louis, C. Lundberg, & J. Martin (Eds.), *Organisational culture* (pp. 31-54). Beverley Hills, CA: Sage.
- Ward, J. J. H. (1963). Hierarchical grouping to optimize an objective function. *Journal of the American Statistical Association*, 58, 236-244.
- Wartick, S. L., & Cochran, P. L. (1985). The evolution of the corporate social performance model. *Academy of Management Review*, 10(4), 758-769.
- WBCSD. (2008). *Sustainable Consumption and Trends: From a Business Perspective*. Retrieved from <http://www.wbcsd.org/>
- Weick, K. (1969). *The social psychology of organizing*. Reading, MA: Addison-Wesley.
- Welford, R. (1995). *Environmental strategy and sustainable development*. London: Routledge.
- Wiek, A. (2010a). Living Sustainability. In H. S. Lineberry (Ed.), *Defining Sustainability* (pp. 18-27). Tempe: Arizona State University Art Museum.
- Wiek, A. (2010b). *What is a sustainability problem?* Arizona State University.
- Womack, J. P., & Jones, D. T. (1996). *Lean Thinking: Banish Waste and Create Wealth in Your Corporation*. New York: Simon & Schuster
- Zadek, S. (2004). The Path to Corporate Responsibility. *Harvard Business Review*, December.
- Zammuto, R., & Krakower, J. (1991). Quantitative and qualitative studies of organizational culture. *Research in Organizational Change and Development*, 5(83-114).
- Zammuto, R. F., Gifford, B., & Goodman, E. A. (2000a). Managerial ideologies, organization culture, and the outcomes of innovation. In M. F. P. C. M. W. N. M. Ashkanasy (Ed.), *Handbook of organizational culture & climate* (pp. 261-278). Thousand Oaks, CA: Sage.

Zammuto, R. F., Gifford, B., & Goodman, E. A. (2000b). Managerial ideologies, organization culture, and the outcomes of innovation. In C. M. W. N. M. Ashkanasy, & M. F. Peterson (Ed.), *Handbook of organizational culture & climate* (pp. 261-278). Thousand Oaks, CA.: Sage.

Zhu, Q., & Sarkis, J. (2004). The link between quality management and environmental management in firms of differing size: An analysis of organizations in China. *Environ. Qual. Management*, 13, 53-64. doi:10.1002/tqem.20004

APPENDIX

APPENDIX A

A: TABLE 2.1 SUSTAINABILITY PRINCIPLES

TABLE 2.1 SUSTAINABILITY PRINCIPLES		
Source	Principle	Requirements
Gibson (2006)	Socio-ecological system integrity	Build human-ecological relations to establish and maintain the long-term integrity of socio-biophysical systems and protect the irreplaceable life support functions upon which human and ecological well-being depends.
	Livelihood sufficiency and opportunity	Ensure that everyone and every community has enough for a decent life and that everyone has opportunities to seek improvements in ways that do not compromise future generations' possibilities for sufficiency and opportunity.
	Intragenerational equity	Ensure that sufficiency and effective choices for all are pursued in ways that reduce dangerous gaps in sufficiency and opportunity (and health, security, social recognition, political influence, and so on) between the rich and the poor.
	Intergenerational equity	Favour present options and actions that are most likely to preserve or enhance the opportunities and capabilities of future generations to live sustainably.
	Resource maintenance and efficiency	Provide a larger base for ensuring sustainable livelihoods for all, while reducing threats to the long-term integrity of socio-ecological systems by reducing extractive damage, avoiding waste and cutting overall material and energy use
	Socio-ecological civility and democratic governance	bodies to apply sustainability requirements through more open and better informed deliberations, greater attention to fostering reciprocal awareness and collective responsibility, and more integrated use of administrative, market, customary and personal decision-making practices.
	Precaution and adaptation	Respect uncertainty, avoid even poorly understood risks of serious or irreversible damage to the foundations for sustainability, plan to learn, design for surprise, and manage for adaptation.
	Immediate and long term integration	Apply all principles of sustainability at once, seeking mutually supportive benefits and multiple gains.
Robert et al (2002)	Eliminate our contribution to systematic increase in fossil fuel dependence	This means substituting certain minerals that are scarce in nature with others that are more abundant using all mined materials efficiently, and systematically reducing dependence on fossil fuels.
	Eliminate our contribution to systematic increase in synthetic chemical dependence	This means systematically substituting certain persistent and unnatural compounds with ones that are normally abundant or break down more easily in nature, and using all substances produced by society efficiently
Basile (2011)	Eliminate our contribution to the systematic depletion of natural resources	This means drawing resources only from well-managed eco-systems, systematically pursuing the most productive and efficient use both of those resources and land, and exercising caution in all kinds of modification of nature.
	Contribute as much as we can to the meeting of the needs of the present without compromising the ability of future generations to meet their own needs	This means using all of our resources efficiently, fairly and responsibly so that the needs of all people on whom we have an impact, and the future needs of people who are not yet born, stand the best chance of being met.
President's council (1997)	Long-term impacts and consequences:	Sustainable development requires the use of a long-term horizon for decision making in which society pursues long-term aspirations rather than simply making short-term, reactive responses to problems
	Interdependence	promotes actions that expand economic opportunity, improve environmental quality, and increase social well-being all at the same time, never sacrificing one for another.
	Participation and transparency	importance of process and decision making that includes the input of the stakeholders who will be affected by decisions
	Equity	Sustainable development promotes equity among generations and among different groups in society. It recognizes the necessity of equality and fairness, and it reduces disparities in risks and access to benefits.
	Proactive prevention	Sustainable development is anticipatory. It promotes efforts to prevent problems as the first course of action.
UN Global Compact	Human Rights	Businesses should support and respect the protection of internationally proclaimed human rights; and Make sure that they are not complicit in human rights abuses.
	Labour	Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
		The elimination of all forms of forced and compulsory labour;
		The effective abolition of child labour; and
	Environment	The elimination of discrimination in respect of employment and occupation.
		Businesses should support a precautionary approach to environmental challenges;
		Undertake initiatives to promote greater environmental responsibility; and
Anti-Corruption	Encourage the development and diffusion of environmentally friendly technologies.	
	Businesses should work against corruption in all its forms, including extortion and bribery.	

APPENDIX B

B: TABLE 2.2: SUSTAINABILITY IMPLEMENTATION LEVELS

Table 2.2: Sustainability Implementation Levels			
(Carroll, 1979; Henriques & Sadosky, 1999; Russell & McIntosh, 2011)	(Gallagher, nd)	(Dias-Sardinha & Reijnders, 2001)	Other Authors
Reactive	Middle Roaders	Compliance	Noncompliant (Roome, 1992); Beginner (Hunt & Auster, 1990); Nonresponsive (Dunphy, Griffiths, & Benn, 2007); Defensive (Zadek, 2004)
- Involves little or no action in response to social or environmental issues. - Goal is to maximize shareholder value - Responds to sustainability issues as a result of legislation	- Focused on compliance and pollution prevention - Waste minimization	- Goal is to adhere to relevant regulations, agreements and general codes of conduct	
Defensive		Pollution prevention	Firefighter (Hunt & Auster, 1990); Compliance (Dunphy et al., 2007; Roome, 1992; Zadek, 2004); Reactive (Sharma & Vredenburg, 1998); Pollution Prevention (S. Hart, 1995)
- Some action on sustainability issues - Does not anticipate changes in the sustainability agenda - No change in culture; no formal environmental plans		- Optimization of resource consumption - Prevention of wastes	
Accommodative	Efficiency Experts	Eco-efficiency	Concerned citizen (Hunt & Auster, 1990); Compliance plus & quality assurance (Roome, 1992); Efficiency (Dunphy et al., 2007); Managerial (Zadek, 2004); Pollution Prevention (S. Hart, 1995)
- Going beyond what is required by law - Focused on dealing with environmental issues in a formal manner	- Focus on eco-efficiency of production processes through more effective use of process inputs, natural resources and energy	- Use of eco-efficient practices, technologies and products/services - Minimization of environmental impacts with value creation.	
Proactive		Eco-innovation	Pragmatist (Hunt & Auster, 1990); Commercial & environmental excellence (Roome, 1992); Strategic (Zadek, 2004); Strategic proactivity (Dunphy et al., 2007); Product Stewardship (S. Hart, 1995)
- actively engaging in the management of sustainability issues - consistent pattern across a range of sustainability issues		- introduces radical environmental improvements to minimize environmental impacts	
		Eco-ethical	
		- uses environmentally related normative values to guide organisational activities	
Sustainable	Visionaries	Sustainability	Proactivist (Hunt & Auster, 1990); Leading edge (Roome, 1992); Sustainable development (S. Hart, 1995); Civil (Zadek, 2004); Sustaining corporation (Dunphy et al., 2007); Sustainability business model (Stubbs & Cocklin, 2008); Clean Technology & Base of the Pyramid (S. Hart, 1995; Stuart L. Hart, 2011)
- Clearly reflects the definition of sustainable organisations - Sustainability principles are embedded across the organisation	- Goals of product stewardship and environmental sustainability - Stakeholders involved in designing EMS	- Application of the precautionary principle - Integration of externalities into cost accounting - Considers environmental, social and economic justice issues to guide organisational activities	

APPENDIX C

C: TABLE 2.3 SUSTAINABLE BUSINESS PRACTICES

Table 2.3: Sustainable Business Practices				
Author	Title	Categories	Descriptions	Practices
(Sarkis, 1998)	Environmentally conscious business practices	Design for the environment	Consider the complete product life cycle when designing environmental aspects into a product or process	Recyclability; remanufacturability; reuse; disassembly; disposal
		Life cycle Analysis	focuses on the analysis of the design and is closely linked to DFE outputs	Inventory Analysis; Impact Analysis; Life Cycle Costing Improvement Analysis
		Total Quality Environmental Management	Closely related to standard Total Quality Management (TQM)	Leadership; Human Resources Development; Environmental Quality Management Systems; Strategic environmental quality planning; Environmental quality assurance; Environmental measurements; Stakeholder emphasis
		Green Supply Chain Management	Considers the various elements of logistics planning and packaging	Inbound logistics and procurement; Materials management; Outbound logistics; Packaging; Reverse logistics
		Environmental Management systems: ISO 14001		Environmental policy; Planning; Environmental aspects; Legal and other requirements; Objectives and targets; Environmental management program(s); Implementation and operation; Structure and responsibility; Training, awareness and competence; Communication; Environmental management system documentation; Document control; Operational control; Emergency preparedness and response; Checking and corrective action; Monitoring and measurement; Non conformance and corrective and preventative action; Records; Environmental management system audit;
(S. Hart, 1995; Stuart L. Hart, 2011)		Pollution Prevention	minimize emissions, effluents, and wastes.	
		Product Stewardship	Lower product life cycle cost	
		Clean Technology	Make quantum leap improvements	
		Base of the pyramid	Meet unmet needs of the poor	
(Mittal et al., 2013)	Green Supply Chain Management Practices	Internal environmental management practices		- Eg: reduced energy and resource consumption
		External environmental management practices		- Eg: green purchasing, motivating and developing suppliers to inculcate green practices
		Cooperation with customers		- Eg: environmental requirements, investment-recovery, waste minimization
		Eco-design practices		
(Jean Garner Stead & W. Edward Stead, 2013)	Sustainable Strategic Management Competitive Strategies	Eco-efficiency strategies	Involves developing cost-competitive advantages by eliminating or reducing resource depletion, materials use, energy consumption, emissions, and effluents.	- redesigning pollution and waste control systems, - redesigning production processes to be more environmentally sensitive, - using recycled materials from production processes and/or outside sources, - using renewable energy sources, - increasing the durability and service intensity of goods and services - etc
		Socio-efficiency strategies	Socio-efficiency strategies enhance both social and human capital while contributing to the organization's economic sustainability	- creating stakeholder value - valuing human capital - develop human capital - viewing social capital as instrumental in value creation - being a good corporate citizen - etc
		Product Stewardship strategies	Strategies designed to provide a firm with competitive advantages by allowing it to ecologically and socially differentiate its products and services from its competitors	- Eco and social labeling - Improving social and environmental footprints - Safe and affordable products and services - Less material and energy use - Recyclable, biodegradable, durable products - etc
		Climate change strategies	New business models are needed that can decouple carbon emissions from economic growth, especially in the developing and developed markets of the world where carbon emissions are the highest.	- Carbon disclosure
		Emerging business models	Achieving sustainability will require that organizations in developed and developing markets create and implement innovative Sustainable Strategic Management (SSM) strategies that deliver long-term consumer value in creative ways that protect and enhance the planet's ecological and social systems and encourage sustainable consumption patterns that are in balance with the carrying capacity of the Earth.	- Minimizing environmental and social impacts by emphasizing bundling services - selling end-use value - ensuring cradle-to-cradle stewardship - etc
		Sustainable marketing strategies	Putting an organization's product stewardship commitment at the center of its marketing efforts is an essential element of SSM	- engaging with customers to develop consumer learning - etc

(Perotti et al., 2012)	Green Supply Chain Practices	Impact on environmental performance		<ul style="list-style-type: none"> - reduction of air emission, - reduction of waste water, - reduction of solid wastes, - decrease of consumption for hazardous/harmful/toxic materials, - decrease of frequency for environmental accidents, - improve a company's environmental situation
		Impact on economic performance		<ul style="list-style-type: none"> positive - decrease of cost for materials purchasing, - decrease of cost for energy consumption, - decrease of fee for waste treatment, - decrease of fee for waste discharge, - decrease of fine for environmental accidents or negative - increase of investment, - increase of operational cost, - increase of training cost, - increase of cost for purchasing - environmentally friendly material
		Impact on operational performance		<ul style="list-style-type: none"> - increase amount of goods delivered on time, - decrease inventory levels, - increase scrap rate, - promote product quality, - increased product line, - improved capacity utilization
(Dos Santos et al., 2013)	Indicators of sustainable business practices	Ecological		<ul style="list-style-type: none"> - good business overall items - energy items - carbon footprint items - Water items - Food packaging items - Inclusion in JSE SRI items
		Social		<ul style="list-style-type: none"> - Customer tracking study items regarding good business journey elements - Number of permanent employee items - Training and skills development items - Employment equity items - Health and Safety items - Preferential procurement items - Corporate social investment contribution items
		Economic		Revenue; Return on equity; Adjusted headline earnings per share; Share price appreciation; Food market share; Clothing, footwear and accessories market share
(Stocchetti, 2012a)	Control system for sustainability - areas	Environment		Material consumption (materials, energy, water); Sources of supply (renewable, recycled, certified, "short-chain"); Emissions; Wastes; Biodiversity; Land consumption
		Society		Employee (safety & health, salary level, working hours, training and career opportunities; Stakeholders; Customers; Elderly, disabled and indigents); Local/regional community National community
		Performances		Costs (overall costs, weight on budget, avg cost per unit, avg cost per hour); Earnings; Finance; Innovation; Brand image; Portfolio management

APPENDIX D

D: TABLE 5.2: INDEPENDENT SAMPLES T-TEST ON PRACTICE CLUSTERS

Group Statistics										
cluster		N	Mean	Std. Deviation	Std. Error Mean					
ProdProc	cluster1	29	0.0385	0.02831	0.00526					
	cluster2	36	0.1181	0.03607	0.00601					

Independent Samples Test										
Levene's Test for Equality of Variances					t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
ProdProc	Equal variances assumed	0.004	0.947	-9.719	63	0.000	-0.07966	0.00820	-0.09604	-0.06328
	Equal variances not assumed			-9.974	62.969	0.000	-0.07966	0.00799	-0.09562	-0.06370

Group Statistics										
cluster		N	Mean	Std. Deviation	Std. Error Mean					
ProdProc	cluster1	29	0.0385	0.02831	0.00526					
	cluster3	8	0.0646	0.04493	0.01588					

Independent Samples Test										
Levene's Test for Equality of Variances					t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
ProdProc	Equal variances assumed	4.640	0.038	-2.020	35	0.051	-0.02608	0.01291	-0.05229	0.00013
	Equal variances not assumed			-1.559	8.592	0.155	-0.02608	0.01673	-0.06421	0.01204

Group Statistics										
cluster		N	Mean	Std. Deviation	Std. Error Mean					
ProdProc	cluster1	29	0.0385	0.02831	0.00526					
	cluster4	34	0.0519	0.02246	0.00386					

Independent Samples Test										
Levene's Test for Equality of Variances					t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
ProdProc	Equal variances assumed	1.945	0.168	-2.102	61	0.040	-0.01345	0.00640	-0.02625	-0.00065
	Equal variances not assumed			-2.064	53.162	0.044	-0.01345	0.00652	-0.02653	-0.00038

Group Statistics										
cluster		N	Mean	Std. Deviation	Std. Error Mean					
ProdProc	cluster1	29	0.0385	0.02831	0.00526					
	cluster5	31	0.0470	0.03150	0.00566					

Independent Samples Test										
Levene's Test for Equality of Variances					t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
ProdProc	Equal variances assumed	0.633	0.429	-1.100	58	0.276	-0.00852	0.00775	-0.02404	0.00699
	Equal variances not assumed			-1.104	57.914	0.274	-0.00852	0.00772	-0.02398	0.00694

Group Statistics										
cluster		N	Mean	Std. Deviation	Std. Error Mean					
ProdProc	cluster1	29	0.0385	0.02831	0.00526					
	cluster6	7	0.0805	0.02899	0.01096					

Independent Samples Test										
Levene's Test for Equality of Variances					t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
ProdProc	Equal variances assumed	0.116	0.736	-3.514	34	0.001	-0.04208	0.01197	-0.06641	-0.01774
	Equal variances not assumed			-3.462	8.980	0.007	-0.04208	0.01215	-0.06958	-0.01458

Group Statistics										
cluster		N	Mean	Std. Deviation	Std. Error Mean					
ProdProc	cluster1	29	0.0385	0.02831	0.00526					
	cluster7	10	0.1846	0.03301	0.01044					

Independent Samples Test										
		Levene's Test for Equality of Variances				t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
ProdProc	Equal variances assumed	0.460	0.502	-13.496	37	0.000	-0.14612	0.01083	-0.16806	-0.12418
	Equal variances not assumed			-12.502	13.859	0.000	-0.14612	0.01169	-0.17121	-0.12103

Group Statistics										
cluster		N	Mean	Std. Deviation	Std. Error Mean					
ProdProc	cluster1	29	0.0385	0.02831	0.00526					
	cluster8	4	0.0402	0.01884	0.00942					

Independent Samples Test										
		Levene's Test for Equality of Variances				t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
ProdProc	Equal variances assumed	1.309	0.261	-0.115	31	0.909	-0.00169	0.01469	-0.03164	0.02827
	Equal variances not assumed			-0.156	5.107	0.882	-0.00169	0.01079	-0.02924	0.02587

Group Statistics										
cluster		N	Mean	Std. Deviation	Std. Error Mean					
Waste	cluster2	36	0.0365	0.03714	0.00619					
	cluster3	8	0.0178	0.01347	0.00476					

Independent Samples Test										
		Levene's Test for Equality of Variances				t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Waste	Equal variances assumed	4.045	0.051	1.397	42	0.170	0.01876	0.01343	-0.00833	0.04585
	Equal variances not assumed			2.402	32.240	0.022	0.01876	0.00781	0.00286	0.03466

Group Statistics											
cluster		N	Mean	Std. Deviation	Std. Error Mean						
Waste	cluster2	36	0.0365	0.03714	0.00619						
	cluster4	34	0.0172	0.01795	0.00308						
Independent Samples Test											
Levene's Test for Equality of Variances											
t-test for Equality of Means											
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
Waste	Equal variances assumed		10.277	0.002	2.752	68	0.008	0.01937	0.00704	0.00532	0.03342
	Equal variances not assumed				2.802	51.142	0.007	0.01937	0.00691	0.00549	0.03325

Group Statistics											
cluster		N	Mean	Std. Deviation	Std. Error Mean						
Waste	cluster2	36	0.0365	0.03714	0.00619						
	cluster5	31	0.0031	0.00467	0.00084						
Independent Samples Test											
Levene's Test for Equality of Variances											
t-test for Equality of Means											
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
Waste	Equal variances assumed		30.110	0.000	4.972	65	0.000	0.03342	0.00672	0.02000	0.04685
	Equal variances not assumed				5.351	36.285	0.000	0.03342	0.00625	0.02076	0.04609

Group Statistics											
cluster		N	Mean	Std. Deviation	Std. Error Mean						
Waste	cluster2	36	0.0365	0.03714	0.00619						
	cluster6	7	0.0434	0.04642	0.01755						
Independent Samples Test											
Levene's Test for Equality of Variances											
t-test for Equality of Means											
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
Waste	Equal variances assumed		0.268	0.607	-0.428	41	0.671	-0.00683	0.01596	-0.03906	0.02540
	Equal variances not assumed				-0.367	7.566	0.724	-0.00683	0.01861	-0.05017	0.03651

Group Statistics											
cluster		N	Mean	Std. Deviation	Std. Error Mean						
Waste	cluster2	36	0.0365	0.03714	0.00619						
	cluster7	10	0.0362	0.03768	0.01191						
Independent Samples Test											
Levene's Test for Equality of Variances											
t-test for Equality of Means											
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
Waste	Equal variances assumed		0.198	0.659	0.024	44	0.981	0.00032	0.01332	-0.02652	0.02715
	Equal variances not assumed				0.024	14.247	0.982	0.00032	0.01343	-0.02844	0.02907

Group Statistics											
cluster		N	Mean	Std. Deviation	Std. Error Mean						
Waste	cluster2	36	0.0365	0.03714	0.00619						
	cluster8	4	0.0269	0.01285	0.00642						
Independent Samples Test											
Levene's Test for Equality of Variances											
t-test for Equality of Means											
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
Waste	Equal variances assumed		2.269	0.140	0.513	38	0.611	0.00970	0.01888	-0.02853	0.04792
	Equal variances not assumed				1.087	10.390	0.302	0.00970	0.00892	-0.01008	0.02947

Group Statistics										
cluster		N	Mean	Std. Deviation	Std. Error Mean					
Waste	cluster3	8	0.0178	0.01347	0.00476					
	cluster4	34	0.0172	0.01795	0.00308					
Independent Samples Test										
Levene's Test for Equality of Variances										
t-test for Equality of Means										
Waste	Equal variances assumed	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
		0.347	0.559	0.090	40	0.929	0.00061	0.00678	Lower	Upper
	Equal variances not assumed			0.107	13.575	0.916	0.00061	0.00567	-0.01159	0.01281

Group Statistics										
cluster		N	Mean	Std. Deviation	Std. Error Mean					
Waste	cluster3	8	0.0178	0.01347	0.00476					
	cluster5	31	0.0031	0.00467	0.00084					
Independent Samples Test										
Levene's Test for Equality of Variances										
t-test for Equality of Means										
Waste	Equal variances assumed	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
		14.074	0.001	5.126	37	0.000	0.01466	0.00286	Lower	Upper
	Equal variances not assumed			3.033	7.440	0.018	0.01466	0.00483	0.00337	0.02596

Group Statistics										
cluster		N	Mean	Std. Deviation	Std. Error Mean					
Waste	cluster3	8	0.0178	0.01347	0.00476					
	cluster6	7	0.0434	0.04642	0.01755					
Independent Samples Test										
Levene's Test for Equality of Variances										
t-test for Equality of Means										
Waste	Equal variances assumed	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
		4.486	0.054	-1.496	13	0.158	-0.02559	0.01710	Lower	Upper
	Equal variances not assumed			-1.408	6.884	0.203	-0.02559	0.01818	-0.06873	0.01755

Group Statistics										
cluster		N	Mean	Std. Deviation	Std. Error Mean					
Waste	cluster3	8	0.0178	0.01347	0.00476					
	cluster7	10	0.0362	0.03768	0.01191					
Independent Samples Test										
Levene's Test for Equality of Variances										
t-test for Equality of Means										
Waste	Equal variances assumed	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
		1.734	0.206	-1.312	16	0.208	-0.01845	0.01405	Lower	Upper
	Equal variances not assumed			-1.438	11.720	0.177	-0.01845	0.01283	-0.04648	0.00959

Group Statistics										
cluster		N	Mean	Std. Deviation	Std. Error Mean					
Waste	cluster3	8	0.0178	0.01347	0.00476					
	cluster8	4	0.0269	0.01285	0.00642					
Independent Samples Test										
Levene's Test for Equality of Variances					t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Waste	Equal variances assumed	0.040	0.846	-1.114	10	0.291	-0.00907	0.00813	-0.02719	0.00906
	Equal variances not assumed			-1.134	6.377	0.298	-0.00907	0.00800	-0.02835	0.01022

Group Statistics										
cluster		N	Mean	Std. Deviation	Std. Error Mean					
Waste	cluster4	34	0.0172	0.01795	0.00308					
	cluster5	31	0.0031	0.00467	0.00084					
Independent Samples Test										
Levene's Test for Equality of Variances					t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Waste	Equal variances assumed	16.304	0.000	4.227	63	0.000	0.01405	0.00332	0.00741	0.02070
	Equal variances not assumed			4.404	37.860	0.000	0.01405	0.00319	0.00759	0.02052

Group Statistics										
cluster		N	Mean	Std. Deviation	Std. Error Mean					
Waste	cluster4	34	0.0172	0.01795	0.00308					
	cluster6	7	0.0434	0.04642	0.01755					
Independent Samples Test										
Levene's Test for Equality of Variances					t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Waste	Equal variances assumed	9.021	0.005	-2.568	39	0.014	-0.02620	0.01020	-0.04684	-0.00556
	Equal variances not assumed			-1.471	6.374	0.189	-0.02620	0.01781	-0.06918	0.01678

Group Statistics										
cluster		N	Mean	Std. Deviation	Std. Error Mean					
Waste	cluster4	34	0.0172	0.01795	0.00308					
	cluster7	10	0.0362	0.03768	0.01191					
Independent Samples Test										
Levene's Test for Equality of Variances					t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Waste	Equal variances assumed	3.161	0.083	-2.243	42	0.030	-0.01905	0.00849	-0.03620	-0.00191
	Equal variances not assumed			-1.548	10.230	0.152	-0.01905	0.01231	-0.04639	0.00828

Group Statistics										
cluster		N	Mean	Std. Deviation	Std. Error Mean					
Waste	cluster4	34	0.0172	0.01795	0.00308					
	cluster8	4	0.0269	0.01285	0.00642					
Independent Samples Test										
Levene's Test for Equality of Variances					t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Waste	Equal variances assumed	0.333	0.567	-1.041	36	0.305	-0.00967	0.00930	-0.02853	0.00918
	Equal variances not assumed			-1.358	4.515	0.238	-0.00967	0.00712	-0.02859	0.00924

Group Statistics										
cluster		N	Mean	Std. Deviation	Std. Error Mean					
Waste	cluster5	31	0.0031	0.00467	0.00084					
	cluster6	7	0.0434	0.04642	0.01755					

Independent Samples Test										
		Levene's Test for Equality of Variances				t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Waste	Equal variances assumed	32.383	0.000	-4.952	36	0.000	-0.04026	0.00813	-0.05674	-0.02377
	Equal variances not assumed			-2.292	6.028	0.062	-0.04026	0.01757	-0.08319	0.00268

Group Statistics										
cluster		N	Mean	Std. Deviation	Std. Error Mean					
Waste	cluster5	31	0.0031	0.00467	0.00084					
	cluster7	10	0.0362	0.03768	0.01191					

Independent Samples Test										
		Levene's Test for Equality of Variances				t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Waste	Equal variances assumed	16.097	0.000	-4.905	39	0.000	-0.03311	0.00675	-0.04676	-0.01946
	Equal variances not assumed			-2.772	9.090	0.021	-0.03311	0.01194	-0.06009	-0.00613

Group Statistics										
cluster		N	Mean	Std. Deviation	Std. Error Mean					
Waste	cluster5	31	0.0031	0.00467	0.00084					
	cluster8	4	0.0269	0.01285	0.00642					

Independent Samples Test										
		Levene's Test for Equality of Variances				t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Waste	Equal variances assumed	8.714	0.006	-7.564	33	0.000	-0.02373	0.00314	-0.03011	-0.01735
	Equal variances not assumed			-3.663	3.103	0.033	-0.02373	0.00648	-0.04396	-0.00350

Group Statistics										
cluster		N	Mean	Std. Deviation	Std. Error Mean					
Waste	cluster6	7	0.0434	0.04642	0.01755					
	cluster7	10	0.0362	0.03768	0.01191					

Independent Samples Test										
		Levene's Test for Equality of Variances				t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Waste	Equal variances assumed	0.437	0.519	0.350	15	0.731	0.00715	0.02040	-0.03634	0.05063
	Equal variances not assumed			0.337	11.219	0.742	0.00715	0.02121	-0.03942	0.05372

Group Statistics										
cluster		N	Mean	Std. Deviation	Std. Error Mean					
Waste	cluster6	7	0.0434	0.04642	0.01755					
	cluster8	4	0.0269	0.01285	0.00642					
Independent Samples Test										
		Levene's Test for Equality of Variances				t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Waste	Equal variances assumed	2.421	0.154	0.683	9	0.512	0.01653	0.02421	-0.03824	0.07129
	Equal variances not assumed			0.884	7.449	0.404	0.01653	0.01868	-0.02712	0.06018

APPENDIX E

E: TABLE 5.3: MEANS OF SB PRACTICE CLUSTERS

Descriptives^a		Mean	
Cluster		Statistic	Std. Error
ProdProc	1	0.038468016	0.005257632
	2	0.118129952	0.006011994
	3	0.064550104	0.015884187
	4	0.051922522	0.003855075
	5	0.046990314	0.005656768
	6	0.080543857	0.010955966
	7	0.1845883	0.010438267
	8	0.040153833	0.009419317
SChain	1	0.011519803	0.001991926
	2	0.014815777	0.001954873
	3	0.025083215	0.008205071
	4	0.040469833	0.005209776
	5	0.013243728	0.00358082
	6	0.023395429	0.007577276
	7	0.0492237	0.016150628
	8	0.217664	0.010654597
EWM	1	0.018121295	0.002765401
	2	0.047525093	0.003834991
	3	0.224035119	0.013596158
	4	0.084161452	0.005575642
	5	0.023144558	0.003810778
	6	0.063885595	0.008229648
	7	0.107281383	0.013027628
	8	0.067175	0.016191369
MonRep	1	0.019230771	0.00280671
	2	0.026145907	0.00336793
	3	0.035309197	0.004804329
	4	0.03433863	0.004078732
	5	0.017917195	0.002083109
	6	0.052485262	0.016702091
	7	0.06092905	0.016477247
	8	0.0439095	0.011393471
Waste	1	0.009200859	0.001790785
	2	0.036549263	0.006189968
	3	0.017788304	0.004761218
	4	0.017179504	0.00307898
	5	0.003125097	0.000839608
	6	0.043380119	0.01754606
	7	0.036233667	0.011914948
	8	0.026854167	0.006423614
RD	1	0.017109814	0.002851826
	2	0.024500674	0.003165642
	3	0.026406146	0.005241679
	4	0.040569221	0.006305683
	5	0.010956145	0.002791958
	6	0.049624833	0.011197095
	7	0.05745605	0.016132292
	8	0.0190855	0.003679704
Ethics	1	0.00377212	0.001156331
	2	0.005464807	0.001892511
	3	0.001140313	0.000746793
	4	0.007645574	0.00191795
	5	0.002338619	0.000702238
	6	0.013083762	0.004657163
	7	0.006395633	0.002836521
	8	0.007005833	0.001695752
DvipWrd	1	0.003688157	0.002142351
	2	0.001427565	0.001006022
	0		
	3		
	4	0.003633814	0.002013296
	5	0.013191135	0.003594658
	6	0.004336571	0.004336571
	7	0.004634333	0.002193812
8	0.0185165	0.01727756	

Descriptives^a		Mean	
Cluster		Statistic	Std. Error
ExtrnlOri	1	0.030251074	0.004823867
	2	0.04488453	0.005354539
	3	0.046892932	0.015427151
	4	0.035343055	0.003573274
	5	0.049188959	0.005872024
	6	0.037185476	0.009378902
	7	0.065352117	0.011408619
	8	0.0259865	0.012343371
ComPhil	1	0.017638217	0.003661878
	2	0.02577804	0.003578184
	3	0.05152378	0.013546125
	4	0.045946939	0.00512933
	5	0.006922594	0.002049607
	6	0.071227	0.026135218
	7	0.029317367	0.007550947
	8	0.038711333	0.016087482
EmpRcrt	1	0.048026991	0.005218962
	2	0.070466825	0.008954215
	3	0.052885193	0.006363867
	4	0.047801002	0.003939583
	5	0.032419691	0.003538277
	6	0.080943452	0.017621715
	7	0.0589102	0.011673308
	8	0.043997833	0.0095891
IntlBizStgy	1	0.037358468	0.004789128
	2	0.058151556	0.004049667
	3	0.068762902	0.00929358
	4	0.047388604	0.003445524
	5	0.050850002	0.004356048
	6	0.086399976	0.009437883
	7	0.137901183	0.009592259
	8	0.072110834	0.012240406
FinRsk	1	0.013115154	0.002755924
	2	0.01362636	0.002099064
	3	0.024753244	0.005068499
	4	0.020501248	0.003609788
	5	0.114617352	0.007928486
	6	0.027689429	0.008641978
	7	0.0374445	0.008901784
	8	0.014507667	0.004781866
HS	1	0.026098684	0.004759341
	2	0.027859696	0.003740131
	3	0.018934703	0.006337651
	4	0.026264109	0.004112915
	5	0.008674435	0.002634601
	6	0.163276833	0.026870991
	7	0.03516215	0.008469816
	8	0.028436333	0.014659084
RegsComp	1	0.004149914	0.000849082
	2	0.0083	
	3	0.010659092	0.003525977
	4	0.007505196	0.001208904
	5	0.002953285	0.001084755
	6	0.015282952	0.007030535
	7	0.0047062	0.00145075
	8	0.0110885	0.004960696
Environ	1	0.023061819	0.003471344
	2	0.047155527	0.005252203
	3	0.041048081	0.011529101
	4	0.034058867	0.003782281
	5	0.007898207	0.001419848
	6	0.062751905	0.010685343
	7	0.05418075	0.012831528
	8	0.037510167	0.010619051

APPENDIX F

F: TABLE 5.4: 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 WHEEL	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 Corporation	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 Pow	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
Consortio 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

Microsoft Corporati	Large	Private company	Computers	United States of America	Northern Ame	CSR	4
MillerCoors	Large	Private company	Food and Beverage Pro	United States of America	Northern Ame	CSR	6
Minera Alumbreira	Large	Private company	Mining	Argentina	Latin America	CSR	5
MMG	MNE	Private company	Mining	Hong Kong	Asia	CSR	3
Monsanto	MNE	Private company	Agriculture	United States of America	Northern Ame	CSR	3
Mota-Engil SGPS	Large	Private company	Construction	Portugal	Europe	AnnIntg	5
Murray & Roberts	Large	Private company	Construction	South Africa	Africa	AnnIntg	7
Natura	Large	Private company	Household and Person	Brazil	Latin America	AnnIntg	6
NCC	Large	Private company	Construction	Sweden	Europe	AnnIntg	6
Nexen	MNE	Private company	Energy	Canada	Northern Ame	CSR	6
NGK Insulators	MNE	Private company	Chemicals	Japan	Asia	CSR	6
Nidera Argentina	MNE	Subsidiary	Agriculture	Argentina	Latin America	CSR	4
Nippon Paper Group	Large	Private company	Forest and Paper Produ	Japan	Asia	CSR	7
Nippon Sheet Glass	Large	Private company	Construction Materials	Japan	Asia	CSR	6
Nutreco	Large	Private company	Food and Beverage Pro	Netherlands	Europe	AnnIntg	6
OJSC Nizhnekamskkn	Large	Partnership	Chemicals	Russian Federation	Europe	CSR	3
Olympus Corporatio	MNE	Private company	Equipment	Japan	Asia	CSR	6
Omnican Limited	Large	Private company	Energy	Mauritius	Africa	CSR	5
Orion Group	MNE	Private company	Healthcare Products	Finland	Europe	CSR	6
Osaka Gas	Large	Private company	Energy	Japan	Asia	CSR	5
OZ Minerals					0	CSR	5
Paladin Energy Limit	MNE	Private company	Mining	Australia	Oceania	GRI	7
Palfinger	Large	Private company	Construction Materials	Austria	Europe	AnnIntg	5
Panasonic Corporati	Large	Private company	Construction	Spain	Europe	CSR	7
Paranapanema	Large	Private company	Chemicals	Brazil	Latin America	CSR	3
PepsiCo	MNE	Private company	Food and Beverage Pro	United States of America	Northern Ame	CSR	5
Petrobras	Large	Private company	Energy	Brazil	Latin America	CSR	5
Petrochina	Large	Subsidiary	Chemicals	Mainland China	Asia	CSR	6
Petronas	Large	State-owned company	Energy	Malaysia	Asia	CSR	6
PhosAgro	Large	Private company	Chemicals	Russian Federation	Europe	AnnIntg	4
Primero Mining Corp	MNE	Private company	Mining	Canada	Northern Ame	CSR	5
PSV Holdings	Large	Private company	Metals Products	South Africa	Africa	AnnIntg	7
Qatargas	Large	Subsidiary	Energy	Qatar	Asia	CSR	3
QGEP	Large	Private company	Energy	Brazil	Latin America	CSR	4
Renaissance Services	MNE	Private company	Energy	Oman	Asia	AnnIntg	5
Royal Wessanen	Large	Private company	Food and Beverage Pro	Netherlands	Europe	AnnIntg	7
Sakhalin Energy	Large	Subsidiary	Energy	Russian Federation	Europe	CSR	6
Samsung Engineerin	Large	Private company	Construction	Korea, Republic of	Asia	CSR	3
Santos	Large	Private company	Energy	Australia	Oceania	CSR	5
Sapa Group	MNE	Subsidiary	Automotive	Sweden	Europe	CSR	6
Shanghai Fosun Phar	Large	Private company	Healthcare Products	Mainland China	Asia	CSR	4
Shaw Industries Gro	Large	Private company	Construction Materials	United States of America	Northern Ame	CSR	5
Siam City Cement Pu	Large	Private company	Mining	Thailand	Asia	CSR	5
Sibanye Gold Limitec	Large	Private company	Mining	South Africa	Africa	AnnIntg	4
SK Chemicals	Large	Private company	Chemicals	Korea, Republic of	Asia	CSR	3
Smurfit Kappa	Large	Private company	Forest and Paper Produ	Ireland	Europe	CSR	4
Steelcase	MNE	Private company	Consumer Durables	United States of America	Northern Ame	CSR	6
Syncrude	Large	Partnership	Energy	Canada	Northern Ame	CSR	5
Talvivaara	Large	Private company	Metals Products	Finland	Europe	AnnIntg	5
Tatneft	Large	Private company	Energy	Russian Federation	Europe	CSR	6
Thai Oil	Large	Private company	Energy	Thailand	Asia	CSR	6
Thaibev	Large	Private company	Food and Beverage Pro	Thailand	Asia	AnnIntg	4
Tiger Brands	MNE	Private company	Household and Person	South Africa	Africa	AnnIntg	6
Tikkurila	MNE	Private company	Chemicals	Finland	Europe	CSR	4
Toshiba TEC Corpora	MNE	Private company	Equipment	Japan	Asia	CSR	6
Toyota Gosei Comp	Large	Private company	Automotive	Japan	Asia	AnnIntg	4
Toyota Argentina	Large	Private company	Automotive	Argentina	Latin America	CSR	4
Toyota Boshoku	Large	Subsidiary	Automotive	Japan	Asia	AnnIntg	7
Toyota Europe	Large	Private company	Automotive	Belgium	Europe	CSR	4
Toyota Global					0	CSR	7
Toyota India	Large	Private company	Automotive	India	Asia	CSR	4
Toyota Japan	MNE	Private company	Automotive	Japan	Asia	CSR	6
Toyota North Americ	Large	Subsidiary	Automotive	United States of America	Northern Ame	CSR	5
TXC Corporation	Large	Private company	Technology Hardware	Taiwan	Asia	CSR	3
Umicore	Large	Private company	Metals Products	Belgium	Europe	AnnIntg	6
Unilever N.V.	MNE	Private company	Food and Beverage Pro	Netherlands	Europe	CSR	6
Unimicron	MNE	Private company	Technology Hardware	Taiwan	Asia	CSR	4
Vaisala Oyj	Large	Private company	Technology Hardware	Finland	Europe	CSR	7
Volkswagen Aktiengt	Large	Private company	Automotive	Germany	Europe	CSR	6
Volvo group	MNE	Private company	Automotive	Sweden	Europe	CSR	7
Wärtsilä Corporatio	MNE	Private company	Energy	Finland	Europe	AnnIntg	6
Wescoal Holdings	Large	Private company	Mining	South Africa	Africa	AnnIntg	5
Wilmar International	MNE	Private company	Agriculture	Singapore	Asia	CSR	3
Wistron Corporation	Large	Private company	Computers	Taiwan	Asia	CSR	5
WP	Large	Subsidiary	Energy Utilities	Korea, Republic of	Asia	CSR	3
Xerox	MNE	Private company	Equipment	United States of America	Northern Ame	CSR	6
Yokohama Rubber C	Large	Private company	Construction Materials	Japan	Asia	CSR	4
Yuhan-Kimberly	Large	Subsidiary	Household and Person	Korea, Republic of	Asia	CSR	5

APPENDIX G

G: TABLE 5.5: CROSSTABS PRACTICE CLUSTERS/CONTROL VARIABLES

cluster	cluster * sector Crosstabulation														Total
	Mining	Automotive	Healthcare Products	Aviation	Chemicals	Food and Beverage Products	Energy	Construction Materials	Agriculture Consumer Durables	Forest and Paper Products	Computers	Household and Personal Products	Metals Products	Technology Hardware	
Cluster 1	Count	4, b	6, b	3, b	2, b	1, b	1, b	2, b	1, b	1, b	1, b	1, b	1, b	3, b	28
	Expected Count	2.3	2.3	2.0	2.0	2.7	5.2	2.0	1.8	0.7	1.3	0.5	0.7	1.3	28.0
	% within cluster	14.3%	21.4%	10.7%	7.1%	3.6%	3.6%	7.1%	3.6%	3.6%	0.0%	0.0%	0.0%	10.7%	100%
Cluster 2	Count	0, b	5, b	2, b	0, b	5, b	2, b	4, b	5, b	1, b	5, b	1, b	0, b	2, b	36
	Expected Count	3.0	3.0	2.5	0.5	2.5	6.7	2.5	2.3	0.9	1.6	0.7	0.9	1.2	36.0
	% within cluster	0.0%	13.9%	5.6%	0.0%	18.9%	8.3%	5.6%	13.9%	2.8%	13.9%	2.8%	0.0%	5.6%	100%
Cluster 3	Count	1, a	0, a	0, a	0, a	1, a	5, a	0, a	0, a	0, a	0, a	0, a	0, a	0, a	7
	Expected Count	0.6	0.6	0.5	0.1	0.5	1.3	0.5	0.4	0.2	0.2	0.1	0.2	0.2	7.0
	% within cluster	14.3%	0.0%	0.0%	0.0%	0.0%	71.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Cluster 4	Count	3, a	0, a	0, a	0, a	1, a	3, a	3, a	1, a	0, a	1, a	1, a	1, a	1, a	34
	Expected Count	2.8	2.8	2.4	0.4	2.4	3.3	6.3	2.4	2.2	1.5	0.9	1.5	0.9	34.0
	% within cluster	8.8%	0.0%	0.0%	0.0%	2.9%	8.8%	44.1%	8.8%	8.8%	5.9%	2.9%	0.0%	2.9%	100%
Cluster 5	Count	2, a	1, a	2, a	0, a	1, a	5, a	4, a	1, a	2, a	1, a	2, a	1, a	4, a	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	1.4	1.0	31.0
	% within cluster	6.8%	3.2%	6.5%	0.0%	3.2%	16.1%	12.9%	12.9%	3.2%	6.5%	0.0%	3.2%	3.2%	100%
Cluster 6	Count	3, a	0, a	3, a	0, a	1, a	0, a	0, a	0, a	0, a	0, a	0, a	0, a	0, a	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	0.1	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%	100%
Cluster 7	Count	0, b	1, b	1, b	0, b	2, b	0, b	0, b	0, b	2, b	0, b	0, b	0, b	0, b	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	0.4	0.3	10.0
	% within cluster	0.0%	10.0%	10.0%	0.0%	20.0%	0.0%	0.0%	0.0%	10.0%	0.0%	0.0%	10.0%	0.0%	100%
Cluster 8	Count	0, a	0, a	0, a	0, a	0, a	2, a	0, a	0, a	0, a	0, a	0, a	0, a	0, a	3
	Expected Count	0.3	0.3	0.2	0.0	0.2	0.3	0.6	0.2	0.1	0.1	0.1	0.1	0.1	3.0
	% within cluster	0.0%	0.0%	0.0%	0.0%	0.0%	66.7%	0.0%	0.0%	33.3%	0.0%	0.0%	0.0%	0.0%	100%
Total	Count	13	13	11	2	11	15	29	11	10	7	4	7	3	166
	Expected Count	13.0	13.0	11.0	2.0	11.0	15.0	29.0	11.0	10.0	7.0	4.0	7.0	3.0	166.0
	% within cluster	8.3%	8.3%	7.1%	1.3%	7.1%	9.6%	18.6%	7.1%	6.4%	4.5%	2.6%	4.5%	1.9%	100%

APPENDIX H

H: TABLE 5.6: INDEPENDENT SAMPLES T-TEST ON CULTURE CLUSTERS

Group Statistics										
Cluster Number of Case		N	Mean	Std. Deviation	Std. Error Mean					
Adhocracy	2	20	0.06	0.060	0.013					
	5	6	0.40	0.160	0.065					

Independent Samples Test										
		Levene's Test for Equality of Variances				t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Adhocracy	Equal variances assumed	9.895	0.004	-8.173	24	0.000	-0.344	0.042	-0.431	-0.257
	Equal variances not assumed			-5.159	5.427	0.003	-0.344	0.067	-0.512	-0.177

Group Statistics										
Cluster Number of Case		N	Mean	Std. Deviation	Std. Error Mean					
Adhocracy	3	31	0.25	0.084	0.015					
	5	6	0.40	0.160	0.065					

Independent Samples Test										
		Levene's Test for Equality of Variances				t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Adhocracy	Equal variances assumed	4.751	0.036	-3.521	35	0.001	-0.155	0.044	-0.244	-0.066
	Equal variances not assumed			-2.307	5.545	0.064	-0.155	0.067	-0.322	0.013

Group Statistics										
Cluster Number of Case		N	Mean	Std. Deviation	Std. Error Mean					
Adhocracy	3	31	0.25	0.084	0.015					
	4	34	0.11	0.063	0.011					

Independent Samples Test										
		Levene's Test for Equality of Variances				t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Adhocracy	Equal variances assumed	3.074	0.084	7.447	63	0.000	0.136	0.018	0.100	0.173
	Equal variances not assumed			7.348	55.204	0.000	0.136	0.019	0.099	0.173

Group Statistics										
Cluster Number of Case		N	Mean	Std. Deviation	Std. Error Mean					
Adhocracy	1	63	0.08	0.059	0.007					
	4	34	0.11	0.063	0.011					

Independent Samples Test										
		Levene's Test for Equality of Variances				t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Adhocracy	Equal variances assumed	0.047	0.828	-2.713	95	0.008	-0.035	0.013	-0.060	-0.009
	Equal variances not assumed			-2.660	64.055	0.010	-0.035	0.013	-0.061	-0.009

Group Statistics										
Cluster Number of Case	N	Mean	Std. Deviation	Std. Error Mean						
Adhocracy	1	63	0.08	0.059	0.007					
	2	20	0.06	0.060	0.013					

Independent Samples Test										
		Levene's Test for Equality of Variances				t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Adhocracy	Equal variances assumed	0.012	0.913	1.232	81	0.222	0.019	0.015	-0.011	0.049
	Equal variances not assumed			1.218	31.424	0.232	0.019	0.015	-0.013	0.050

Group Statistics										
Cluster Number of Case	N	Mean	Std. Deviation	Std. Error Mean						
Adhocracy	4	34	0.11	0.063	0.011					
	5	6	0.40	0.160	0.065					

Independent Samples Test										
		Levene's Test for Equality of Variances				t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Adhocracy	Equal variances assumed	11.900	0.001	-7.979	38	0.000	-0.291	0.036	-0.365	-0.217
	Equal variances not assumed			-4.392	5.273	0.006	-0.291	0.066	-0.459	-0.123