

## Antecedents of sustainable organizing: A look at the relationship between organizational culture and the triple bottom line

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### Abstract:

This study used an international sample of 137 firms to examine the relationship between organizational culture and an organization's emphasis on, and its outcomes related to, financial, social, and ecological well-being. The study draws on configuration theory, the Competing Values Framework, and the Triple Bottom Line approach to suggest that: (1) a hierarchy culture is associated with greater emphasis on financially sustainable organizing and with better financial outcomes, (2) a clan culture is associated with greater emphasis on socially sustainable organizing and with better social outcomes, (3) a market culture is associated with greater emphasis on ecologically sustainable organizing and with better ecological outcomes, and (4) an adhocracy culture is associated with greater emphasis on holistically sustainable organizing and with better holistic outcomes. Using a case survey methodology and objective performance measures, the findings provide support for the hypothesized relationships between the hierarchy culture and financially sustainable organizing, the clan culture and socially sustainable organizing and outcomes, and the market culture and ecologically sustainable outcomes. These results suggest that organizational culture is related to sustainability in predictable ways, that a configuration theory approach is useful in understanding this relationship, and provide a basis for future research to explore additional configuration elements in sustainable organization typologies.

**Keywords:** Competing values framework | Configuration theory | Organizational culture | Sustainability | Triple bottom line | Well-being

### Article:

#### 1. Introduction

Scholars agree that sustainable business has three key dimensions: financial, social, and ecological (e.g., Dyck et al., 2018, Glavas and Mish, 2015, Joyce and Paquin, 2016). This three-dimensional understanding is also becoming the norm among practitioners, where it is often called the “triple bottom line” (TBL) approach (Elkington, 1997, McWilliams et al., 2016). For

example, the percentage of the hundred largest corporations that include ecological and social performance in their annual reports is 100% in the UK, 99% in Japan, 83% in the USA, 59% in China, and 30% in India (Buhr et al., 2014). Similarly, a recent international survey found that 80% of managers mentioned financial sustainability issues, 70% mentioned ecological sustainability issues, and 66% mentioned social sustainability issues, as significant or very significant for their firms (Kiron et al., 2013). Clearly sustainability has become an important strategic issue for businesses.

While most observers acknowledge the importance of sustainable business practices, too little is known about how to achieve them. Thus, scholars have called for research that sheds light on the antecedents of sustainable business practices (e.g., Attig and Cleary, 2015, Glavas and Mish, 2015). Among the variety of factors that could contribute to sustainability, this study focused on the role of organizational culture. Culture has been shown to play an important role in explaining a variety of organizational phenomena, and the values and ethics embodied in culture may be especially important for understanding and motivating sustainable business (e.g., Elkington, 1997, Linnenluecke and Griffiths, 2010). Since organizational culture refers to the set of shared values and norms that influence how members perceive and interact with each other and their environment (Schein, 1985), it follows that differences in organizational culture could be associated with differences in firms' sustainability beliefs and practices (Baird et al., 2018). Consistent with this reasoning, the current study examined the influence of organizational culture on which dimensions of sustainability were emphasized within an organization, and on its sustainability outcomes. In particular, the four organizational cultures of the Competing Values Framework (CVF) – hierarchy, clan, market, and adhocracy (Quinn, 1990, Quinn and Kimberly, 1984, Quinn and Rohrbaugh, 1983) – were linked to four different types of organizational sustainability: financial, social, ecological, and holistic (Russell et al., 2007).

A number of authors have recently looked at the relationship between culture and sustainability (e.g., Adams et al., 2018, Glavas and Mish, 2015, Hansen and Schaltegger, 2016), though few studies have examined organizational sustainability as the dependent variable, and even fewer studies have investigated culture's role as an antecedent of specific sustainability outcomes (cf. Attig and Cleary, 2015, Linnenluecke and Griffiths, 2010). Indeed, the research reported here could be the first multi-organization empirical study that links the four cultures in the CVF to the four types of organizational sustainability. Examining this link is important for four reasons. First, given the important influence that culture has on other organizational outcomes, the link between organizational culture and sustainability remains a surprisingly underdeveloped area of study. Second, knowing which type of culture may be linked to specific sustainability outcomes could help managers and investors make strategic decisions related to resource commitments. For example, the findings from this study suggest that clan cultures contribute to socially sustainable outcomes, and that market cultures facilitate ecologically sustainable outcomes. Third, given the potentially catastrophic socio-ecological issues facing the planet, an understanding of the relationship between culture and sustainability is sorely needed to better address those important and timely issues. Finally, by linking a typology of organizational culture to sustainable organizing and to sustainable outcomes, a foundation for the future development of richer configuration typologies with more elements and greater predictive power is provided.

The article unfolds in four parts. First, hypotheses are developed from a review of the organizational sustainability and culture literatures. Second, the paper describes the case survey methodology (Larsson, 1993, Larsson and Finkelstein, 1999) and how it was used. Third, findings based on data from 137 firms in 27 different countries are presented in terms of their organizational culture and their financial, social, ecological, and holistic emphases and performance. Finally, the implications of the study are discussed.

## 2. Literature review and hypothesis development

Configuration theory characterizes organizations in terms of multidimensional constellations of elements that commonly occur together, and helps to explain how the different elements of a configuration fit together (Meyer et al., 1993). Max Weber's (1978) work was a classic example of developing different typologies or "ideal types." Since then numerous typologies have been developed within the organizational sciences, such as Miles and Snow's (1978) well-known typology of Prospector, Defender, Analyser, and Reactor organizations. Relevant to the current study, scholars have recognized the merit in studying the "configuration of sustainability oriented practices" (Maletič et al., 2018, p. 424). Drawing on configuration theory, and in particular Miller's (2018) approach to developing it by starting with an existing typological conceptual framework and then exploring more deeply what occurs within its categories, the current study integrated a well-established typology of organizational culture (the Competing Values Framework; Quinn and Rohrbaugh, 1983) with an existing empirically-grounded four-part typology of sustainable organizing (Russell et al., 2007).

### 2.1. A four-part typology of organizational culture

Quinn and Rohrbaugh (1983, p. 66) observed that organizational "culture is the set of values and assumptions that underlie the statement, 'This is how we do things around here'." Along the same lines, Schein (1985) argued that organizational culture refers to the set of shared values and norms that influence how members perceive and interact with each other and their environment. An organization's culture has a strong influence not only on the behavior of members, but also on subsequent performance outcomes (Boyce et al., 2015). Indeed, more than 5,000 studies have examined the link between organizational culture and performance since 1980 (Hartnell et al., 2011). Thus, it is not surprising that "... many scholars suggest that the pathway for the adoption of corporate sustainability principles leads via the adoption of a sustainability-oriented organizational culture" (Linnenluecke and Griffiths, 2010, p. 357). Consistent with the larger literature, the current study posits that organizational culture could be related to both the sustainability preferences emphasized by an organization's members as well as to the actual sustainability outcomes or accomplishments of organizations (e.g., Schein, 1985, p. 65). Specifically, this research examined the relationships between organizational culture and (1) the relative *emphasis* firms placed on different dimensions of sustainability (i.e., sustainable organizing), and (2) the relative *performance* of organizations in the different dimensions of sustainability (i.e., sustainable outcomes).

The Competing Values Framework (CVF) remains perhaps the best-known and most widely accepted typology of organizational culture (e.g., Graafland, 2018, Malbašić et al., 2015). It was empirically derived and validated to reflect the most important elements that define

organizational culture (Cameron and Quinn, 2006, Howard, 1998). As a result, it aligns with “well-known and widely accepted categorical schemes that outline how people think, how they organize their values and ideologies, and how they process information” (Linnenluecke and Griffiths, 2010, p. 359). In sum, the CVF provides the most widely used configurational model of organizational culture among both researchers and practitioners.

The CVF is defined by two dimensions (Quinn and Rohrbaugh, 1983). Along the first axis, the CVF differentiates organizational cultures based on whether members value *change* (i.e., flexibility and adaptiveness) or *stability* (i.e., predictability and control). The second dimension differentiates cultures based on whether members prioritize the *internal* environment of the organization or its *external* environment. Crossing these two dimensions yields four types of organizational culture: 1) a *hierarchy* culture values stability and focuses on the organization's internal environment; 2) a *clan* culture values flexibility and focuses on the organization's internal environment; 3) a *market* culture values stability and focuses on the organization's external environment; and 4) an *adhocracy culture* values flexibility and focuses on the organization's external environment. As described below, each of these culture types was hypothesized to have different sustainability implications.

## 2.2. Culture and sustainability emphasis

Organizational sustainability has been described as having three dimensions: financial, social, and ecological (e.g., Elkington, 1997). This framework was “implied in the literature, though not empirically supported” prior to a study by Russell et al. (2007, p. 50). Those authors interviewed 38 participants from a deliberately wide range of organizations and asked each interviewee a series of four open-ended questions to understand “*what* the participants considered corporate sustainability to be and *how* they enacted this understanding in practice” (Russell et al., 2007, page 40; emphasis in original). Although these data were collected at the individual level, two of the four questions participants were asked included a referent shift (Chan, 1998) to the organizational level, which was the focus of analysis in their paper. In particular, their analysis pointed to four types of sustainable organizing: “(1) a corporation working towards 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 [that balances financial, ecological, and social well-being]<sup>1</sup>” (Russell et al., 2007, p. 40).

Because organizational culture consists of values and beliefs that shape perception and behavior (Schein, 1996), it is reasonable to suggest that organizational culture may be associated in predictable ways with the type of sustainable organizing members focus on. Specifically, this emphasis might be evident in which dimension of sustainability (i.e., financial well-being, social well-being, ecological well-being, or a balance of the three) an organization's members prioritized in terms of their attention, discussion, and effort. Indeed, others have argued that Russell et al.'s (2007) four types of sustainable organizing might be related to the four

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<sup>1</sup> “Participants who demonstrated a holistic understanding acknowledged a range of issues around the concept of corporate sustainability. ... their discussion centered around a need to *balance* economic, social and natural environment issues, and suggested a need to understand the *systems and interconnections* between each element in the systems” (Russell et al., 2007, p. 40; emphases added here).

organizational cultures associated with the CVF (e.g., Linnenluecke and Griffiths, 2010, Linnenluecke et al., 2009).

Table 1 presents the hypotheses examined in this study, which suggest that each CVF culture type will emphasize a different dimension of sustainability. The specific emphasis hypothesized to be associated with each culture is described more fully below, but a simple overview of the basic rationale is as follows. First, along the horizontal dimension, an organizational culture can focus on internal or on external resources and processes. Alongside of their culture and other intangible resources, organizations are said to have two main types of internal resources: employees, and physical/financial assets (Barney, 1991). According to the CVF (e.g., Quinn, 1990, p. 51), when these two types of internal resources are juxtaposed along the vertical dimension (i.e., flexibility vs stability), the flexibility-oriented clan culture would be expected to place relatively more emphasis on the development of human resources. This emphasis is consistent with the idea that human resources are more flexible, and less predictable, than physical/financial assets. In contrast, the stability-oriented hierarchy culture would be expected to place relatively more emphasis on physical/financial assets, the second type of internal resource. Of course, this is not to suggest that clan cultures are not concerned with physical/financial assets, or that hierarchy cultures are not concerned with human resources, but rather to suggest that clan cultures would devote relatively more attention and effort to human resources (and thus to social sustainability within the firm), while hierarchy cultures would have a greater relative emphasis on physical/financial assets (and thus on financial sustainability). Thus, in terms of the dimensions of sustainability, the clan culture's emphasis on human resources was expected to be related to a greater emphasis on socially sustainable organizing and outcomes, and the hierarchy's emphasis on physical/financial assets was expected to be related to a greater emphasis on financially sustainable organizing and outcomes.

**Table 1.** Hypotheses tested in the current study.

	<b>Hierarchy culture</b>	<b>Clan culture</b>	<b>Market culture</b>	<b>Adhocracy culture</b>
	<b>Compared to the other three CVF cultures, the hierarchy culture will:</b>	<b>Compared to the other three CVF cultures, the clan culture will:</b>	<b>Compared to the other three CVF cultures, the market culture will:</b>	<b>Compared to the other three CVF cultures, the adhocracy culture will:</b>
Hypothesis 1: CVF culture type predicts emphasis on different understandings of sustainable organizing	H1a: place the greatest emphasis on <i>financial well-being</i> .	H1b: place the greatest emphasis on <i>social well-being</i> .	H1c: place the greatest emphasis on <i>ecological well-being</i> .	H1d: place the greatest emphasis on <i>holistic well-being</i> .
Hypothesis 2: CVF culture type predicts sustainability outcomes (i.e., performance)	H2a: have the best performance on <i>financial sustainability outcomes</i> .	H2b: have the best performance on <i>social sustainability outcomes</i> .	H2c: have the best performance on <i>ecological sustainability outcomes</i> .	H2d: have the best performance on <i>holistic sustainability outcomes</i> .

In terms of external focus, organizations' environments exhibit both changing and stable elements. The two externally focused cultures (i.e., adhocracy and market) vary in their orientation toward flexibility (adhocracy) versus stability (market). Because the market culture is highly sensitive to its dependence on the external environment, and favors the creation of stable systems for managing that dependence, it could be expected that the market culture would place particular attention to managing its interface with the ecological environment (i.e., recognizing

the need for resource stewardship and creating systems for doing so). In contrast, the adhocracy culture, because of its emphasis on flexibility and change, would emphasize a wider variety of forms of well-being as it adapts to a constantly changing environment. Thus, in terms of the dimensions of sustainability, the market culture's emphasis on stable systems was expected to be related to a greater emphasis on ecologically sustainable organizing and outcomes, and the adhocracy culture's emphasis on adapting to a continually changing environment was expected to be related to a holistic emphasis on all aspects of sustainable organizing and outcomes.

### *2.2.1. Hierarchy culture and financial sustainability*

The hierarchy culture—consistent with its internal focus and stability orientation—emphasizes control, measurement, documentation, information management, and continuity (Quinn, 1990). Organizations with hierarchy cultures should thus be inclined to emphasize internal resources that are subject to reliable measurement and control (e.g., accounting practice and financial resources). Consistent with this reasoning, the literature provides considerable support for the proposition that, among the four CVF cultures, the greatest relative emphasis on *financial* well-being would be found in firms with a hierarchy culture (e.g., Campbell et al., 2013, Robbins and Page, 2012). For example, Linnenluecke et al. (2009) hypothesized that a hierarchy culture would “place greater emphasis on an economic understanding of corporate culture sustainability” because this type of culture was related to Barley and Kunda's (1992) “scientific management” ideology, and to Scott's (2003) closed-system rational models, both of which sought rationalized production processes, efficiency, and maximization of financial gains (cf. Zammuto et al., 2000). Linnenluecke and Griffiths (2010, p. 360) likewise proposed that organizations with a hierarchy culture “place greater emphasis on economic performance, growth and long-term profitability in their pursuit of corporate sustainability.” Moreover, this logic is supported by empirical evidence linking the hierarchy culture to an emphasis on financial well-being. Linnenluecke et al. (2009, p. 441) found that a firm with a hierarchy culture “predominantly seeks economic and financial information as the basis for decision-making.”

### *2.2.2. Clan culture and social sustainability*

A clan culture prioritizes the internal environment of the organization and, rather than being primarily attentive to stable internal resources like physical and financial assets (as in the hierarchy culture), is particularly attentive to dynamic issues related to human resources such as morale, cohesion, and commitment, and organizational mechanisms such as participative decision-making, positive treatment of employees, and effective governance (Quinn, 1990, Quinn et al., 1996). In other words, clan cultures are thought to focus on social well-being in the firm. Within the sustainability literature, among the four CVF cultures, scholars have argued that clan cultures place the highest relative emphasis on *social* well-being (e.g., Campbell et al., 2013, Linnenluecke and Griffiths, 2010). For example, Linnenluecke et al. (2009) argued that a clan culture is related to Barley and Kunda's (1992) “human relations” ideology, and to Scott's (2003) closed-system natural models, both of which pay attention to things like group affiliation, work conditions, and social interaction (cf. Zammuto et al., 2000). Consistent with the reasoning above, Linnenluecke et al. (2009) found a positive correlation between a clan culture

and a social understanding of corporate sustainability.<sup>2</sup> Of note, however, Linnenluecke et al. (2009) suggested that a clan culture would be linked only to internally-oriented social sustainability, and not to external social well-being. Nonetheless, others have suggested that an emphasis on social well-being within an organization can be expected to spill over and improve the social well-being of people outside of the organization as well (Dyck et al., 2018).

### *2.2.3. Market culture and ecological sustainability*

Reflecting an external focus and stability orientation, members of a market culture are sensitive to aspects of their external environment and motivated to establish stable and predictable ways of interacting with them (Quinn, 1990, Quinn et al., 1996). A market culture applies logic to existing knowledge and sees the organization as a rational economic entity that seeks to optimize outcomes (Quinn, 1990). Linnenluecke et al. (2009, p. 439) argued that the ideologies and theory underlying the market culture:

... highlight the importance of the wider environment for the organization, and the need for rational planning and organizing in light of environmental demands. The [market culture] quadrant corresponds to the system rationalism ideology of Barley and Kunda (1992), which focuses on planning, forecasting, controlling and the design of the organizational structure and decision processes to match the external environment. It is also analogous to Scott's (2003) classification of open-rational system models. In this quadrant, the efficient use of resources, planning and goal setting, and the adequacy of organizational structures in light of the environment are valued highly. These aspects, in particular the efficient use of resources and the avoidance of adverse effects on the environment, are essential to the environmental understanding of corporate sustainability.

As a result of this keen awareness of dependence on external environments, it was expected that the market culture would exhibit a particularly strong emphasis on reducing ecological impacts via systems like ISO 14000 practices, working with other members of the supply chain, and developing systemic ways to sell by-products (Graafland, 2018). Similarly, Robbins and Page (2012, p. 178) suggested that firms with a market culture would focus on things like “pollution mitigation” and on “products and services that continue business as usual but in a cleaner and more efficient way. This includes both tools for ‘cleaning up the mess’ more effectively as well as avoiding creating a mess in the first place” (Robbins and Page, 2012, p. 177; see also Campbell et al., 2013, p. 130; Linnenluecke and Griffiths, 2010).

Of course, this is not to suggest that other organizational cultures do not attend to ecological well-being. But the market culture, with its focus on stable, rational ways to manage the external environment, would be more likely to place greater emphasis on ecological well-being than the other three culture types. Similarly, the market culture clearly places emphasis on financial well-being and social well-being, but relatively less than that of hierarchy and clan cultures respectively.

### *2.2.4. Adhocracy culture and holistic sustainability*

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<sup>2</sup> They also found that social sustainability was positively correlated with both market and adhocracy cultures, though the correlation was largest with the clan culture.

Finally, the adhocracy culture—with its external focus and flexibility orientation—has been associated with being innovative and adaptive, with members who have an “idealistic orientation” and focus on multiple objectives simultaneously, even though they may not master any of them (Quinn, 1990, p. 36). Thus the adhocracy culture may be inclined to pursue all three dimensions of sustainable organizing, rather than emphasizing one over another. As such, scholars have argued that, among the four CVF cultures, the highest relative emphasis on holistic well-being would be found in firms with an adhocracy culture (Campbell et al., 2013, Linnenluecke et al., 2009, p. 439; Robbins and Page, 2012, p. 179). Indeed, Linnenluecke and Griffiths (2010, p. 364) suggested that the adhocracy culture represented the “‘ideal’ culture profile for corporate sustainability” because it offers a balanced approach that pursues all three dimensions of sustainability in an adaptive and ongoing way. Moreover, they found that an adhocracy culture was positively related to an emphasis on holistic sustainability.

### 2.3. Culture and sustainable organizational performance

The four types of sustainable organizational outcomes used here parallel Russell and colleagues’ (2007) four types of sustainable organizing. Although much previous research has examined some combination of the three dimensions of sustainable performance (e.g., financial, social, and/or ecological), it has been repeatedly observed that few studies have examined each of the three dimensions of sustainability separately, and even fewer have treated them as outcomes to be explained (Attig and Cleary, 2015, Hahn et al., 2015, p. 298; see also Campbell et al., p. 130; Glavas and Mish, 2015, p. 624). Instead, past sustainability scholars and practitioners have typically focused on financial performance (e.g., “Does it pay to be green?”), and described social and ecological well-being primarily as new opportunities or tools to enhance financial profits (e.g., Hart, 1995). For example, as described in Dyck et al. (2018), this approach highlights how reduced packaging material could improve profits by reducing both costs and waste, or how offering onsite daycare could increase profits by increasing employee morale and reducing sick days and turnover costs. In contrast, the current study treated all four types of sustainable performance as inherently valuable and sought to explain how they arise.

Specifically, Hypothesis 2 predicts that each of the four cultures is associated with different sustainability *outcomes*, in a way that is consistent with and parallels members’ emphases in sustainable organizing. Thus, as shown in Table 1, a hierarchy culture should be associated with greater financial performance (Hypothesis 2a), a clan culture should be associated with greater social performance (Hypothesis 2b), a market culture should be associated with greater ecological performance (Hypothesis 2c), and an adhocracy culture should be associated with greater holistic sustainability performance (Hypothesis 2d).

The rationale supporting Hypothesis 2 parallels the rationale supporting Hypothesis 1. In other words, the same reasons that certain cultural values and orientations toward internal-external or stability-flexibility are associated with the dimensions of sustainability that members *emphasize* (Hypothesis 1), suggest that each culture would be associated with specific sustainability outcomes (Hypothesis 2). The dimension of sustainability that members give the most attention to should also be the dimension on which the organization performs best.



Nonetheless, there is ample evidence highlighting situations where organizational values and goals were not associated with predicted organizational outcomes, and instead led to unintended results (e.g., Balogun, 2005). Similarly, there is no guarantee that emphasis will always match actual practice. Consider greenwashing, wherein organizational members emphasize their commitment to ecological sustainability but fail to be sustainable in practice (Walker and Wan, 2012). As a result, this study does not assume consistency between emphasis and practice, and so each is assessed independently.

### **3. Methodology**

The hypotheses were tested using a multiple case study or “case survey” approach, which allowed for a combination of detailed insight and statistical analysis, contributing to richer and more generalizable findings (Eisenhardt, 1989, Larsson, 1993, Larsson and Finkelstein, 1999, Yin, 1994). Specifically, to test Hypothesis 1, published case studies were analyzed and the organizations they described were classified in terms of the four CVF culture types and their relative emphasis on each of the sustainability dimensions. To test Hypothesis 2, these case-based classifications were matched with external measures of each organization's sustainability performance.

#### **3.1. Sample and procedure**

The case survey method makes use of previously published cases that are relevant to the research question under study (Larsson, 1993, Larsson and Finkelstein, 1999, Walker et al., 2015). Using Harvard Business Publishing—which provides a well-regarded and comprehensive source of business cases—cases were selected based on three criteria. First, the case had to be about an organization that was publicly owned, so that its financial performance could be assessed using public sources. Second, the case had to provide sufficient detail to allow clear coding of its organizational culture, and of its emphasis on the three dimensions of sustainability. Finally, the case had to be about an organization rated by Sustainalytics between the years 2009 and 2013, so that its social and ecological performance could be assessed.

Sustainalytics is a private research firm providing information for socially responsible investing by conducting independent analyses of the social and ecological performance of more than 4,000 companies. Sustainalytics' assessments are based on reviewing external sources (e.g., NGO reports, newspapers), company documents (e.g., annual reports), and input from peer reviews and experienced analysts (Smith, 2015). Sustainalytics' data have been used frequently in prior research (e.g., Auer, 2016, Husted and de Sousa-Filho, 2017, Wolf, 2014, Walker et al., 2018), and researchers have argued that its scoring system allows for greater variability among organizations' ratings than is evident in the more commonly used KLD data (Surroca et al., 2010). This study limited data to the years 2009–2013, because Sustainalytics' pre-2009 scores used a different methodology to gather and report data, making them less comparable with the more recent data.

Harvard Business Publishing offered case studies of more than 800 organizations that were both Sustainalytics-rated and publicly traded. However, most of these organizations were not described in appropriate detail to support a clear categorization of organizational culture.

Ultimately, cases describing 137 organizations from 27 countries met all three selection criteria, and each of these cases was independently coded by two extensively trained research assistants.

The training and coding took place over half a year and involved a number of steps. First, one of the authors and the two research assistants coded five cases together discussing the coding and variation in values for the variables. Second, five additional cases were coded independently, after which the team met again to discuss all five cases and any discrepancies in the coding. Following this second round, the research assistants each coded 10 more cases independently, and met a final time to compare results. The research assistants then coded the remaining cases. The final result revealed a high level of agreement (average intra-class correlation 0.74), indicating reliable coding. When coding of the cases was complete, Sustainability ratings and financial performance data from Worldscope were added to each case record.

**Table 2.** Summary of measures used.

Phenomenon	Hypothesis	Data Source	Measure	Nature of Code
Organizational culture		Cases	Four CVF cultural archetypes	Categorical
Emphasis on financial sustainability	H1a	Cases	To what extent does the organization place a great deal of value on financial well-being within the organization (e.g., profit statements, share price)?	7-point Likert scale
Emphasis on social sustainability	H1b	Cases	To what extent does the organization place a great deal of value on societal well-being (e.g., support community groups, liaise with external stakeholders)?	7-point Likert scale
Emphasis on ecological sustainability	H1c	Cases	To what extent does the organization place a great deal of value on ecological well-being within the organization (e.g., minimizing pollution, helping others minimize pollution)?	7-point Likert scale
Emphasis on holistic sustainability	H1d	Cases	Rank order each organization (split ties) on each of the three emphases above and sum the three ranks for each organization	Calculated
Financial performance	H2a	Worldscope	Five year average net income (2009–2013)	Calculated
Financial performance	H2a	Worldscope	Five year average return on assets (2009–2013)	Calculated
Social performance	H2b	Sustainalytics	Employee-related controversies or incidents	0 to 100 (higher scores indicate better performance)
Social performance	H2b	Sustainalytics	Governance-related controversies or incidents	0 to 100
Ecological performance	H2c	Sustainalytics	Use of renewable energy sources	0 to 100
Ecological performance	H2c	Sustainalytics	Scope of corporate reporting on greenhouse gas emission	0 to 100
Holistic performance	H2d	Worldscope and Sustainalytics	Rank order each organization (split ties) on the six performance scores above and sum the six ranks for each organization	Calculated

### 3.2. Measures

Table 2 provides an overview the measures used in this study, including CVF culture type, sustainable organization type, and actual performance.

### *3.2.1. CVF culture types*

Schein's (1985) description of the challenge involved in fully understanding an organization's culture involves three levels and is sometimes called the iceberg model. It is relatively easy to examine an organization's first level, visible cultural artifacts, which includes the observable behavior of its members and its constructed social and physical environment. Perhaps the best way to understand this level is to “analyze the central values that provide the day-to-day operating principles by which members of the culture guide their behavior” (Schein, 1985, p. 15), something that can be inferred from case studies. This leads to a second level, called values, which includes things like organizational beliefs and assumptions that are taken for granted. This level is more challenging to discern, but may be found in cases written by authors with a particularly intimate understanding of an organization. Care must be taken to differentiate between values that are merely espoused, versus those that are enacted, in an organization (Schein, 1985, p. 17). The third level, an organization's basic underlying assumptions, is the most challenging to discern. Schein suggested that as an American he could probably decipher the organizational culture of an American business, but he could never “fully decipher” the culture of a Japanese or French firm (Schein, 1985, p. 117). In any case, Schein argues that deciphering the underlying assumptions of an organization's culture requires the joint effort of both a member of the organization and an outsider. Such a joint effort may be evident in cases written by skilled authors who worked closely with organizational members.

The present study did not seek to fully decipher organizations' cultures, seeking only to classify cultures into the four quadrants of the CVF. Doing so is a challenging, but not impossible task. Indeed, the cultures of about 10,000 organizations have been classified in terms of the CVF, typically using a variation of the “Organizational Culture Assessment Instrument” scenario-based survey instrument (Cameron and Quinn, 2006). For example, Linnenluecke et al. (2009) surveyed 255 members of a single organization using a 5 question variation of the survey (adapted from Zammuto and Krakower, 1991). Among other CVF assessment tools, Behraves (2017) analyzed the text in the Global Reporting Initiative reports of 200 businesses using Centering Resonance Analysis (CRA) methodology (Corman et al., 2002) looking for mentions of specific words associated with each of the four CVF cultures.

The present study did not use a survey instrument, nor CRA methodology, but rather was based on analyzing written case descriptions, and placing each firm into one of the four CVF cultural archetypes. Coders categorized the cases using the two key dimensions of the CVF (i.e., stability versus flexibility, and internal versus external). Coders looked for mentions of organizational members focusing on internal factors and/or external factors, and focusing on change and/or predictability. These mentions might have included statements made by the CEO or other managers and members, but also included descriptions related to members' understandings of “how we do things around here.” Coders also looked for more indirect observations, such as descriptions that said a firm had a highly-developed accounting system (internal stability), or an entire department dedicated to monitoring trends in the external environment (external stability).

Consistent with previous studies that noted that multiple cultures can be evident within a firm (e.g., Linnenluecke et al., 2009), eight of the original sample of 145 cases could not be placed in a single culture quadrant, and so were removed, resulting in the final set of 137 organizations.

In many cases, categorizing the organization into a CVF quadrant was relatively straightforward because the descriptions provided in the case explicitly referred to the firm's culture and values. For example, DaVita Medical Group, a managed care provider in the U.S., was clearly a clan culture that valued flexibility and had an internal focus. The case referred to DaVita as behaving “like a community first and a company second” (George and Kindred, 2010, pp. 1–2). DaVita CEO Kent Thiry used the metaphor of a “village” to describe the values emphasized in the organization (George and Kindred, 2010, p. 7):

We introduced the village as a way to communicate that DaVita is a community that takes care of its own. If I talk about a company that works like a healthy village, all DaVita citizens—our employees—understand it means helping your neighbor and caring about each other. You can have two communities that are exactly the same, and one can just be houses next to each other while the other is a neighborhood. It is a mutual social and emotional contract. We work together to make our lives better. Running a sound business for everyone's benefit is an integral part of that.

In other cases, terms like culture and values were not used explicitly, but the organization's values and culture were nevertheless quite evident in the descriptions of artifacts, the way things were done, and other observations by the case authors. Consider the following example of the hierarchy culture at Acer Inc., the Taiwanese multinational electronics firm, and how the case described its internal focus and emphasis on stability. Acer's prioritizing of internal operating systems, and its relative disregard for external relations, were illustrated in the following quote from Ken Tai, head of Acer's sales and marketing in the U.S.: “We had been strong in manufacturing but weak on managing vendors who supplied components to us. Our connection with the makers of CPUs, disk drives, and memory chips, the three key items to making a PC, were not tight enough” (Wasserman et al., 2011, p. 13). Acer's internal focus and emphasis on stability were also evident in its preference for acquisitions over joint ventures, and in its creation of attractive options to encourage employees to purchase shares in the company (Wasserman et al., 2011, pp. 7 and 8).

### *3.2.2. Sustainable organizing emphases*

The cases were also coded to rate the extent to which each organization emphasized financial, social, and ecological well-being on a 7-point Likert-type scale (see 3.2.4 for the operationalization of holistic sustainability). In particular, raters were trained to look for indicators of how much organizational members worked toward, attended to, talked about, and/or invested their energy in any of the three dimensions of sustainability (i.e., financial well-being, social well-being, or ecological well-being).

For example, the following cases were rated as having a high, medium, and low emphasis, respectively, on financial well-being. High emphasis on financial well-being was evident in the case where the CEO was quoted as saying: “*Anyone who says that you should not let financial*

*considerations drive your strategy is not being realistic. Money is everything when you are a small biotechnology firm” (Pisano et al., 2011, p. 1, italics in the original).*

Medium emphasis on financial well-being (and a high emphasis on ecological well-being) was evident in a case about Wipro, an information technology (IT) firm in India. The case focused on green IT and repeatedly noted that the main drive for the initiative was not financial well-being, but ecological well-being. Raghuraman Kalyanaraman, Wipro's head of Green IT, was wary that employees were likely to perceive the introduction of green IT as “yet another efficiency improvement initiative” rather than accept that it was a response to climate change (discussed at length in the case) where financial well-being was important, but no longer priority number one (Bose and Ramasastry, 2009, p. 8).

Finally, low emphasis on financial well-being (and a high emphasis on social well-being) was found in a case about Cipla, a leading generic pharmaceutical firm in India. Yusuf Hamied, the firm's chairman and managing director, is quoted as prioritizing “doing good” over financial returns (Deshpande et al., 2011, p. 7):

I think the multinationals made a big mistake pricing their AIDS medicines at \$12,000 to \$15,000 per patient per year for something that costs them only \$200 ... I am accused of having an ulterior motive. *Of course* I have an ulterior motive: before I die, I want to do some good ... We're not making money, but we are not going to lose money either ... we should break even.

### 3.2.3. Objective performance measures

Data sources outside of the cases were used to develop measures for the financial, social, and ecological performance outcomes of each firm in the sample. Financial performance was measured using five-year averages (2009–2013) of net income and return on assets drawn from Worldscope data. These two measures complemented each other, providing one absolute and one relative measure of financial performance.

Social performance was assessed with two items drawn from Sustainalytics ratings: 1) employee-related incidents and controversies, and 2) governance-related incidents and controversies. Employee-related incidents and controversies included issues such as poor labour standards, poor union relations and freedom of association, safety concerns, or concerns about diversity, health and safety. Governance-related incidents and controversies included conflicts of interest at the board level, accounting irregularities, or issues related to shareholder rights (e.g., voting rights, voting caps). These two items were useful because they clearly focused on social performance, they were applicable to all organizations in our sample (unlike some other industry-specific measures of social well-being reported by Sustainalytics), and they allowed the assessment of internal and external social performance. Both measures were reported on 100-point scales, where higher numbers indicated better performance (i.e., fewer incidents).

Two other items drawn from Sustainalytics were used to assess the ecological performance of each firm in the study: 1) greenhouse gas (GHG) emission reporting, and 2) use of renewable energy sources. Both measures used 100-point scales, where higher numbers indicated that the

organization provided more comprehensive reports on the nature and scope of their emissions, and that the organization made more extensive use of renewable energy sources, respectively. These two items were useful because they clearly focused on ecological performance, were broadly applicable, and combined evidence about both transparency and actual behavior regarding GHG emissions.

#### *3.2.4. Holistic measures*

Given that the holistic understanding of sustainability recognizes the importance of multiple issues and seeks balance among them (Russell et al., 2007), an organization adopting a holistic approach is unlikely to be the best in any one dimension of sustainability, but should have the best overall performance when the three dimensions are considered together. Therefore, to assess holistic emphasis, each organization was rank-ordered (splitting ties) on each of the three emphasis variables (financial, social, and ecological), and each organization's three ranks were summed to get a total score, where higher values indicated better overall performance across the three dimensions. The same procedure was followed to develop a measure of holistic performance, summing the ranks across the six performance measures described above.

### 3.3. Analysis

The hypotheses predict that the group mean of a given measure would be higher for organizations in one cultural group than for those of other cultures. This sort of mean comparison is typically conducted with analysis of variance (ANOVA). However, ANOVA assumes normal distribution and relatively equal numbers in each group. Neither assumption was appropriate for these data, which frequently reflected non-normal distributions and unbalanced numbers. Therefore this study used the Kruskal-Wallis H test (Kruskal and Wallis, 1952), which is a non-parametric extension of ANOVA that does not rely on the same assumptions. Moreover, because the numbers of each type of culture were relatively small (see below), an alpha criterion of 0.10 was adopted.

Several control variables were used to assess the robustness of findings, including firm age, firm size, industry, and the sustainability culture of the country where the organization was headquartered. For the latter, several national sustainability indices were used and, where possible, measures similar to the firm-level performance data were chosen. These measures included country-level ratings of greenhouse gas emissions, renewable energy use, good governance, income distribution, and GDP from the Sustainable Society Index (2016), plus an overall measure of sustainability taken from the Environmental Performance Index (2016). Because some of the CVF culture types were poorly represented (in particular, there were only 6 organizations with a clan culture), statistical power was limited. Therefore control variables were introduced individually. The results reported below were robust across all control variables.

## **4. Results**

The 137 organizations in the sample ranged in age from 9 to 269 years, with a mean of 59 years. They represented 13 different industries and had head offices located on every continent except Antarctica. As such, they provided a diverse and useful international sample to test the

hypotheses. However, the organizational cultures were not evenly distributed. In this sample, there were 22 hierarchy cultures, 6 clan cultures, 62 market cultures, and 47 adhocracy cultures. Table 3 provides the descriptive statistics of the organizations in the sample and Table 4 provides an overview of the findings.

**Table 3.** Descriptive statistics associated with the measures used to test the hypotheses.

	Mean	sd	1	2	3	4	5	6	7	8	9	10
1 Emphasis on financial sustainability	6.04	.70										
2 Emphasis on social sustainability	2.77	2.11	-.26*									
3 Emphasis on ecological sustainability	1.84	1.75	-.09	.51*								
4 Emphasis on holistic sustainability	208.50	64.00	.33*	.72*	.67*							
5 Net income (millions of dollars)	2.04	4.02	.04	.09	.16*	.18*						
6 Return on assets	.06	.06	-.25*	.11	.09	-.02	.27*					
7 Social performance: Employees	91.53	17.39	-.09	.05	.07	-.02	-.33*	.00				
8 Social performance: Governance	96.39	9.37	-.17*	.04	.02	-.07	-.11	.12	.16*			
9 Ecological perf.: Carbon intensity	16.22	29.59	-.08	.09	.13	.04	.05	-.16	-.07	.13		
10 Ecological perf.: GHG reporting	50.24	33.35	.05	-.07	.04	.03	.15	-.04	-.25*	.12	.30*	
11 Holistic performance	417.00	118.90	-.10	.06	.09	.01	.13	.44*	.25*	.47*	.21*	.36*

Note: N = 137.

\*  $p \leq .10$ .

**Table 4.** Overview of hypothesis testing results.

	<b>Hierarchy culture</b> <b>Compared to the other three CVF cultures, the hierarchy culture will:</b>	<b>Clan culture</b> <b>Compared to the other three CVF cultures, the clan culture will:</b>	<b>Market culture</b> <b>Compared to the other three CVF cultures, the market culture will:</b>	<b>Adhocracy culture</b> <b>Compared to the other three CVF cultures, the adhocracy culture will:</b>
Hypothesis 1: CVF culture type predicts emphasis on different understandings of sustainable organizing	H1a: place the greatest emphasis on <i>financial well-being</i> . <b>Findings: support</b>	H1b: place the greatest emphasis on <i>social well-being</i> . <b>Findings: support</b>	H1c: place the greatest emphasis on <i>ecological well-being</i> . <b>Findings: no support; opposite</b>	H1d: place the greatest emphasis on <i>holistic well-being</i> . <b>Findings: no support</b>
Hypothesis 2: CVF culture type predicts sustainability outcomes (i.e., performance)	H2a: have the best performance on <i>financial sustainability outcomes</i> . <b>Findings: no support; opposite</b>	H2b: have the best performance on <i>social sustainability outcomes</i> . <b>Findings: partial support</b>	H2c: have the best performance on <i>ecological sustainability outcomes</i> . <b>Findings: support</b>	H2d: have the best performance on <i>holistic sustainability outcomes</i> . <b>Findings: no support</b>

Hypothesis 1 predicted that each culture would emphasize a different dimension of sustainable organizing. H1a predicted that hierarchy cultures would place the greatest emphasis on financial sustainability, and the data supported this prediction. The emphasis on financial issues among hierarchy cultures (mean 6.32) was significantly higher than that among the other three cultures (mean 5.98;  $\chi^2 = 4.75$ ,  $df = 1$ ,  $p = .03$ ). H1b was also supported; the emphasis on social sustainability among clan cultures (mean 6.17) was higher than that among the other cultures (mean 2.62;  $\chi^2 = 12.61$ ,  $df = 1$ ,  $p < .01$ ). In contrast, H1c was not supported; in fact, the emphasis on ecological issues among market cultures (mean = 1.52) was significantly lower than that among the other cultures (2.11;  $\chi^2 = 3.24$ ,  $df = 1$ ,  $p = .07$ ), which was the opposite of the prediction. H1d also was not supported, as the adhocracy cultures' holistic emphasis (mean

209.67) was not significantly different from that of the other cultures (mean 207.90;  $\chi^2 = 0.15$ ,  $df = 1$ ,  $p = .70$ ).

Hypothesis 2 predicted that each culture would perform best in different dimensions of sustainability. H2a predicted that hierarchy cultures would have the best financial performance, but the data did not support this prediction. Hierarchy cultures actually had a mean net income comparable to that of other cultures (\$0.8M versus \$2.3M;  $\chi^2 = 0.32$ ,  $df = 1$ ,  $p = .57$ ) and their return on assets was in fact significantly lower (0.04 versus 0.07;  $\chi^2 = 5.17$ ,  $df = 1$ ,  $p = .02$ ).<sup>3</sup> H2b predicted that clan cultures would have better social performance, but the empirical support was mixed. Clan cultures did not have significantly better social performance with regard to employee issues (mean 96.67 versus 91.29;  $\chi^2 = 1.92$ ,  $df = 1$ ,  $p = .17$ ), but they did have significantly better performance on governance issues (mean 100.00 versus 96.22;  $\chi^2 = 2.95$ ,  $df = 1$ ,  $p = .09$ ). H2c predicted that market cultures would have better ecological performance, and this prediction was supported by the data. Compared to the others, market cultures performed better in terms of emission reporting (mean 59.90 versus 43.86;  $\chi^2 = 4.97$ ,  $df = 1$ ,  $p = .03$ ) as well as in the use of renewable energy (mean 26.14 versus 9.67;  $\chi^2 = 4.93$ ,  $df = 1$ ,  $p = .03$ ). Finally, H2d predicted that adhocracy cultures would have greater holistic performance, but this prediction was not supported. There was no significant difference between the adhocracy and the three other cultures in terms of holistic performance (mean 439.80 versus 405.23;  $\chi^2 = 2.38$ ,  $df = 1$ ,  $p = .12$ ).

## 5. Discussion

This study found significant relationships between an organization's culture, the dimension of sustainable organizing it emphasized, and its objectively measured sustainability performance. Sometimes these relationships were as hypothesized; other times they were not. As a whole, the findings suggested that knowing a firm's culture could often help to understand its sustainability emphases and outcomes. These findings have implications for theory that links the four CVF cultures with the three main dimensions of sustainability (section 5.1), and for a configuration theory approach to develop a typology of sustainable organizations (section 5.2).

### 5.1. Organizational culture and sustainability

This section discusses the findings and their theoretical implications for each of the four CVF culture types. The findings for each culture type are illustrated with a case drawn from the sample. To facilitate comparability, all cases chosen were technology firms.

#### 5.1.1. Hierarchy culture

As expected, of the four CVF cultures, organizations with a hierarchy culture placed the greatest emphasis on financial well-being (H1a supported). Unexpectedly, however, these firms did not actually have higher financial performance (H2a not supported), even after controlling for industry effects. This lack of financial performance might be surprising because it appears to contradict the idea that outcomes are related to the particular goals that actors emphasize (Locke and Latham, 1990).



By way of explanation, the contradictory results for H1a and H2a may reflect the long-standing argument that organizations that emphasize maximizing profits will be distracted from the core purpose of the business, which is to provide goods and services that create value for customers, and thus paradoxically an emphasis on financial well-being undermines financial performance (Drucker, 1954). Recent research suggested that an emphasis on financial well-being may enhance financial returns in the short-term, but reduce market valuations and financial performance in the long-term (Miller and Xu, 2019). Moreover, today's marketplace might be particularly supportive of businesses that have a more balanced, triple bottom line, approach rather than one whose greatest focus is on maximizing profits (Hart, 1995). A firm that places undue attention on financial outcomes might be perceived poorly by consumers, and suffer accordingly (Carroll and Shabana, 2010). If this explanation is correct, it has implications that go far beyond the study of organizational culture, questioning the merit of the profit-maximization goal that underpins much of mainstream management and business theory (e.g., Ferraro et al., 2005). In particular, it lends support to those who argued that firms seeking to maximize organization profits must create social value and address socio-ecological issues of the day (e.g., Hart, 1995, Porter and Kramer, 1999).

Acer Inc., the Taiwanese multinational electronics firms, was in this study's sample and an example of a company with a hierarchy culture. Its focus on achieving financial efficiencies via stable systems allowed it to become a very profitable volume leader in low-cost computers, but its resulting reputation as a low-cost producer subsequently limited its ability to sell higher-margin premium personal computers (Sharma, 2016, Wasserman et al., 2011). Acer thus illustrates a hierarchy culture whose emphasis on financial concerns was profitable for a time, but did not serve it well in the longer term (Sahai, 2013, Shih, 2005).

### *5.1.2. Clan culture*

As hypothesized, firms with a clan culture tended to place more emphasis on social well-being (H1b supported) and to have better social sustainability outcomes (H2b partially supported) at the governance level. In contrast, clan cultures were not positively associated with better internal social well-being. One explanation might be that the small sample size ( $N = 6$  for clan culture) led to a false rejection, as the score difference in internal social well-being was in the right direction (clan mean = 97; other cultures' mean = 91). Alternatively, the lack of difference in internal social well-being might reflect another pattern. In particular, a clan culture might be one where members experienced a lower absolute number of employee-related incidents and controversies, but where every incident had a greater likelihood of being reported precisely because it was an aberration of the organization's norms. Put differently, employees may be less likely to report incidents of poor social well-being in organizations where the (non-clan) culture places less value on social well-being, or where members are more afraid of negative repercussions associated with whistle-blowing (MacLean, 2002, Zhang et al., 2009). In contrast, with regard to the likelihood of reporting governance-related incidents and controversies, it might be that industry-wide norms and expectations played a relatively larger role in setting the baseline. If this were true, then the hypothesized differences across the four organizational CVF cultures would be more evident in terms of governance, consistent with the findings for H2b.

The China Mobile Communications Corporation, a state-owned telecommunication firm providing voice and multimedia services in mainland China, was an example of a clan culture company in this study (Kirby et al., 2009). Within China, China Mobile was seen as a leader in “linking core values, operations and a management system that addresses social needs” (Jianzhong and Zhao, 2016). Thus, for example, consistent with the current findings, its emphasis on social well-being vis-a-vis corporate governance has been prominently featured on its website ([www.chinamobileltd.com](http://www.chinamobileltd.com)), which included a detailed corporate governance report addressing issues such as the board of directors and committees, remuneration, appointment and rotation of directors, and internal and external audits. Further, China Mobile has encouraged employee whistle-blowing via an “anti-corruption education program,” offering its employees numerous anonymous channels to report employee-related incidents, and being highly transparent about reporting the number of whistle-blowing cases and the percentage that were resolved (China Mobile, 2014). As speculated above, it might be that China Mobile has had relatively few actual employee-related incidents, but the firm's vigilant transparency may result in more reported incidents when compared to another organization with a different culture and fewer channels that encourage reporting employee-related incidents.

### *5.1.3. Market culture*

As expected, firms with a market culture tended to achieve the highest ecologically sustainable performance (H2c supported). However, counter to the hypothesis—but consistent with previous empirical studies (Linnenluecke et al., 2009, Reyes-Santiago et al., 2017)—these firms placed less emphasis on ecological well-being than other firms in the sample (H1c not supported; opposite). Note that this finding for the market culture—that a relatively low emphasis on ecological well-being was associated with a relatively high ecological performance—was the inverse of the finding for the hierarchy culture, where a relatively high emphasis on financial well-being was associated with relatively low financial performance. In both cases, a mismatch was observed between relative emphasis and actual performance. In contrast, a similar disconnect between emphasis (H1) and outcomes (H2) was not evident among the clan and adhocracy cultures.

Both market and hierarchy cultures value stability, and so the results might point to the complex dynamics inherent in sustainability, such that it is difficult to create stable structures and systems that align sustainability emphases and performance in expected ways. The (stability-oriented) structures and systems associated with the market culture placed the lowest emphasis on ecological well-being, even though they had the highest ecological performance. Similarly, the stable structures and systems associated with the hierarchy culture placed the highest emphasis on financial well-being, and they had the lowest financial performance. These findings support the call for more research on the paradox of intended and unintended outcomes generally (Rizzi et al., 2014), and highlight the value in developing an understanding of sustainability that focuses on possible paradoxical interrelationships among the factors associated with different dimensions of sustainability (Hahn et al., 2015). In the case of market cultures, it may be that members optimize their ability to adapt to the external environment by creating stable structures and systems for doing so, but devote greater emphasis and time to dealing with other, more challenging and less predictable aspects of external environment.

Nokia, the Finnish multinational technology firm, was an example of a company with a market culture (Walker and Wilson, 2012). Nokia's leadership role in environmental performance (Kramer, 2010) was aided by the elaborate stable systems it had developed (Nokia, 2016). Nokia had achieved its relatively high ecological performance outcomes (e.g., Nokia ranks in the top 10% of the 2,500 largest companies that lead in sustainability, Aila, 2017) even though its emphasis was on a variety of forms of well-being, such as conducting business with integrity and respecting people (Nokia, 2016; see also Kauflin, 2017).

#### *5.1.4. Adhocracy culture*

Unexpectedly, the findings indicated that firms with an adhocracy culture did not place greater emphasis on holistic well-being (H1d not supported), nor did they have the best performance in holistic sustainability (H2d not supported). These unexpected findings might reflect the way in which holism was operationalized. The current study used a simple additive approach, in which each of the three dimensions of sustainability was treated as independent and equally important. This approach was reasonable, given the current state of knowledge and the lack of well-developed theoretical guidance concerning a more complex relationship. However, future researchers might explore more nuanced operationalizations of holistic sustainability than the one presented here. For example, one might examine thresholds rather than monotonic relationships. In other words, perhaps a holistic culture could be best understood as one where each of the three dimensions of sustainability received “enough” emphasis to pass some threshold level that supported success in the other dimensions. If holism could indeed be the “ideal” way to address current sustainability challenges (Linnenluecke and Griffiths, 2010, p. 364), research needs to better understand it.

Alternatively, the results in this study might be explained by other factors. First, because they value flexibility and adaptation, and the constant change that these values suggest, members of an adhocracy culture might inadvertently “show no interest in continuity and control of the workflow” (Quinn, 1990, p. 71), which might explain their unexceptional achievement and emphasis on measures of on-going sustainability. Along the same lines, it might be that their change-valuing external focus made firms with adhocracy cultures prone to spreading themselves too thin across a wide variety of initiatives related to well-being: “No organization can achieve superior performance if it tries to be all things to all people” (Porter and Kramer, 1999, p. 126).

Blackberry, the Canadian software and internet device multinational firm, was an example of a company with an adhocracy culture (MacCormack et al., 2012). As described in the case, Blackberry seemed to address all the important issues regarding social and ecological well-being. Moreover, its website referred to Blackberry as taking a “holistic approach to sustainability” that included a wide variety of factors common to many MNCs such as: “sustainable materials”, “responsible supply chain”, “manufacturing/production”, “packaging and distribution”, “product use”, and “end of life” (Blackberry, 2013, p. 13). However, this enthusiastic embrace of diverse sustainability issues might have spread the firm's efforts too thin to do any of them particularly well.

## 5.2. Implications for configuration theory and a typology of sustainable organizations

In addition to the implications above concerning the relationship between organizational culture and sustainability, the current results pointed to several directions for theoretical and empirical work regarding organizational configurations. First, this research offered a valuable contribution toward the construction of a typology of sustainable organizations that links cultural types to sustainable organizing. In particular, the results suggested that the relationships between culture and sustainability emphasis, and culture and sustainability outcome, are not always as straightforward as one might expect. Thus, in order to make the links between the configurational elements of each type understandable, new elements need to be added. For example, one such element might be “members' awareness of their firms' sustainability outcomes.” In particular, heightened members' awareness might create greater support for the relationships predicted in the original hypotheses. If members of a hierarchy culture recognized that their emphasis on financial well-being was not leading to the desired financial outcomes, they might become inclined to search for a more nuanced understanding of what does contribute to (and detract from) financial performance, and then make appropriate changes to the activities they emphasize in order to improve financial performance. For example, they might learn that financial performance is optimized when they use their internally- and stability-oriented culture to emphasize the development and delivery of goods and services that truly serve consumers. In other words, in the absence of self-awareness, the hierarchy culture may be prone to follow a variation of the “focusing” trajectory that Miller (1990) identified to describe a type of organizational configuration with a narrow and stability focus, whose focus becomes so extreme that the organization becomes too narrow and too stability-focused, causing its performance to suffer. In order to avoid this fate, members of a hierarchy culture could ensure that their emphasis on financial well-being does not become too narrow.

Similarly, if members of a market culture became aware that they are industry leaders in ecological sustainability outcomes, they might begin to place greater outward emphasis on ecological well-being in their marketing and identity. Recognizing their leadership role in ecological performance may help members to have a more accurate understanding of their strengths and to make those strengths more visible, which may also serve to raise the overall ecological performance of their industry. Of course, members must be wary of placing *too* much emphasis on ecological well-being, lest they follow a variation of a “drifter” trajectory associated with organizational configuration types that emphasize stability and have a broad scope (Miller, 1990). However, more generally, it seems more likely that any self-awareness that draws attention to paradoxes (such as unintended ecological well-being, or unintended poor financial performance) will help to enrich self-understanding and reduce the likelihood of negative organizational trajectories (Miller, 1990, Miller, 1993, Quinn, 1990).

Understanding links of these sorts is important because, as Miller (2018) argued, configuration theorists need to be more deliberate in thinking about and describing the nature of the relationships, synergies, and driving forces that hold the components of a configuration together: “At their best configurations tell a story – one that surfaces important relationships and contrasts and enlightens, elaborates, or calls into question established viewpoints” (Miller, 2018, p. 461). Similarly, perhaps the more participants are aware of the sustainability “story” that their configuration represents, the more likely they are to enhance sustainability. In particular, members of a hierarchy culture who are aware of their relatively poor financial performance

might change the way they emphasize financial well-being by paying greater attention to the socio-ecological aspects of the goods and services they provide. Similarly, members of a market culture who become aware that they are leaders in ecological performance might be more likely to emphasize this, for example, in their marketing and thereby spur greater ecological performance from other organizations. In short, better awareness of the sustainability story associated with various configurations might enhance overall sustainability.

Second, as mentioned above, the results pointed to the potential in thinking more deeply about the nature of holistic sustainability. Future researchers might want to examine thresholds rather than monotonic relationships. In other words, perhaps a holistic organization is one in which each of the three dimensions of sustainability receives “enough” emphasis to pass some threshold level that supports success in the other two dimensions. Within the field of configuration theory, qualitative comparative analysis methodologies seem to be particularly well-suited to address these sorts of questions (Fiss, 2007, Fiss, 2011, Miller, 2018).

Third, it is worth underscoring that a unique aspect of the configurational typology developed in this study was that it included both sustainable organizing (i.e., the dimension of sustainability emphasized among organizational members) and sustainable performance outcomes. This inclusion was notable for several reasons. First, most studies of sustainable organizing do not measure the three types of sustainability independently. Second, most studies do not use sustainability measures as the dependent variable, but rather as independent variables. Third, most previous studies do not have measures for both sustainability emphasis, and objective measures of sustainability performance. Indeed, even relatively easily accessible objective measures of financial performance are rarely used. For example, a recent review found that almost 80 percent of CVF studies used subjective measures even to measure financial outcomes (Hartnell et al., 2011), and similar observations hold when looking at non-financial outcomes (e.g., Naor et al., 2014). If society is to address the socio-ecological issues facing it, then it behooves organizational scholars to examine and understand what types of organizations enhance social and ecological well-being outcomes, as evident in this study.

### 5.3. Practical relevance

This study had several implications for managers. For one, the results lend support to the observation that sustainability advocates would do well to think about sustainability as the dependent variable (Attig and Cleary, 2015). Rather than examine, for example, whether or not sustainability leads to financial performance, the more important challenge facing humankind is to discover what factors lead to socio-ecological sustainability. Towards this end, this study suggested that a clan culture contributed to socially sustainable outcomes, and a market culture facilitated ecologically sustainable outcomes.

Moreover, the link between culture and sustainability could guide practitioners’ choices in making decisions about stakeholders. For example, even if the realities of the prevailing industry or technology made adopting a clan culture impractical for a given organization, managers interested in facilitating social well-being could choose to work with and support potential suppliers, collaborators, and customers with clan cultures. Likewise, managers interested in facilitating ecological well-being can choose to support stakeholders with market cultures.

Finally, the mixed results might point to the merit of practitioners developing and telling the “sustainability story” of their organization. This might involve making explicit which dimension(s) of sustainability the culture of the organization intends to enhance, and provide members with related performance measures to affirm and focus their work toward that end.

#### 5.4. Limitations

This study had several limitations that might influence the interpretation and generalization of the results. First, although the overall sample size of organizations was large compared to other similar studies, the sample had an unequal distribution of organizational cultures. Small samples may lack sufficient power to detect relevant differences, and they might also be more vulnerable to influence by outlier cases (e.g., Button et al., 2013).

Second, consistent with best practice in the case survey technique (Larsson, 1993), this study used all available cases, but the method is inherently exposed to potential sample bias. Case authors were unlikely to choose firms at random when writing cases, and their cases were typically written with specific goals that could influence the presentation of information. As a result, because the sample was limited to publicly traded firms that had received detailed description in previous cases, the generalizability of the findings is uncertain.

Third, the international nature of the organizations in this study, while beneficial in offering a more diversified sample, also might have introduced uncontrolled variability. More specifically, the study was only able to make relatively cursory examinations of the effect of national culture differences on the outcomes. Differing cultural values, laws, and regulations in various countries might compel businesses to implement particular sustainability practices. For example, in some countries firms may face lawsuits if they fail to recognize the legal rights of nature (e.g., in 2008 Ecuador became the world's first country to include the Rights of Nature in its constitution; Kauffman and Martin, 2016). Future research might investigate how the relationship between organizational culture and sustainability emphasis and outcomes might differ by country.

Fourth, for parsimony the hypotheses and results were limited to specific culture and sustainability pairings. Future research might compare all the types of sustainable organizing and sustainable performance across all the culture types. This line of investigation seems important since previous research has found trade-offs between the different sustainability outcomes and the corresponding need for strategic decision-making (McWilliams et al., 2016).

## 6. Conclusion

In examining the relationships between organizational culture and sustainability, this study made three main contributions. First, the study demonstrated how configuration theory could be used to understand the link between organizational cultures and sustainable organizing. The results highlighted the complexity of the relationship between culture and sustainability, and provided a basis for developing more nuanced typologies of sustainable organizations. Second, knowing which type of organizational culture is linked to specific sustainability outcomes could help managers and/or investors make strategic decisions related to resource commitments, as well as

provide information as to which stakeholders and partners are likeliest to support their values. Finally, it was found that emphasizing a specific dimension of sustainable organizing within a firm often did not result in superior performance in that same dimension. This outcome suggests that researchers need to investigate the relationship between sustainability emphasis and outcomes more closely to better understand when the two do and do not align. Taken together, the findings would be relevant to managers, investors, and sustainability advocates, as they suggest ways to improve sustainable organizations.

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## **References**

- Adams, R., Martin, S., Boom, K., 2018. University culture and sustainability: designing and implementing an enabling framework. *J. Clean. Prod.* 171, 434–445.
- Aila, M., 2017, Sept 15. We did it again no oops about it! Nokia.  
<https://blog.networks.nokia.com/corporate-responsibility/2017/09/15/we-did-it-again-no-oops-about-it/>.
- Attig, N., Cleary, S., 2015. Managerial practices and corporate social responsibility. *J. Bus. Ethics* 131, 121–136.
- Auer, B.R., 2016. Do socially responsible investment policies add or destroy European stock portfolio value? *J. Bus. Ethics* 135, 381–397.
- Baird, K., Su, S., Tung, A., 2018. Organizational culture and environmental activity management. *Bus. Strateg. Environ.* 27 (3), 403–414.
- Balogun, J., 2005. Managing change: steering a course of between intended strategies and unanticipated outcomes. *Long. Range Plan.* 39 (1), 29–49.
- Barley, S.R., Kunda, G., 1992. Design and devotion: surges of rational and normative ideologies of control in managerial discourse. *Adm. Sci. Q.* 37 (3), 363–399.
- Barney, J., 1991. Firm resources and sustained competitive advantage. *J. Manag.* 17 (1), 99–120.
- Behraves, S.A., 2017. Uncovering Relationships between Sustainable Business Practice Bundles, Organizational Culture, and Performance. Doctoral dissertation, Arizona State University.
- Blackberry, 2013. Fiscal 2013 Corporate Responsibility Report (November 12).
- Bose, I., Ramasastry, C.S., 2009. Green IT Matters at Wipro Ltd. Ivey Case Publishing.
- Boyce, A.S., Nieminen, L.R., Gillespie, M.A., Ryan, A.M., Denison, D.R., 2015. Which comes first, organizational culture or performance? A longitudinal study of causal priority with automobile dealerships. *J. Organ. Behav.* 36, 339–359.

- Buhr, N., Gray, R., Milne, M.J., 2014. Histories, rationales, voluntary standards and future prospects for sustainability reporting. In: Bebbington, J., Unerman, J., O'Dwyer, B. (Eds.), *Sustainability Accounting and Accountability*, second ed. Routledge, Abingdon Oxon, pp. 51–71.
- Button, K.S., Ioannidis, J.P., Mokrysz, C., Nosek, B.A., Flint, J., Robinson, E.S., Munafò, M.R., 2013. Power failure: why small sample size undermines the reliability of neuroscience. *Nat. Rev. Neurosci.* 14 (5), 365–376.
- Cameron, K.S., Quinn, R.E., 2006. *Diagnosing and Changing Organizational Culture: Based on the Competing Values Framework* (rev. ed.). Addison-Wesley, Reading, MA.
- Campbell, W.M., Ratcliffe, M., Moore, P., 2013. An exploration of the impact of organizational culture on the adoption of green IT. In: *Green Computing and Communications (GreenCom), 2013 IEEE and Internet of Things (iThings/CPSCOM), IEEE International Conference on and IEEE Cyber, Physical and Social Computing*. IEEE, pp. 126–133.
- Carroll, A., Shabana, K., 2010. The business case for corporate social responsibility: a review of concepts, research and practice. *Int. J. Manag. Rev.* 12 (1), 85–105.
- Chan, D., 1998. Functional relations among constructs in the same content domain at different levels of analysis: a typology of composition models. *J. Appl. Psychol.* 83, 234–246.
- China Mobile, 2014. *Anti-Corruption, in Change, With You*. Sustainability Report (page 13). <http://www.chinamobileltd.com/en/ir/reports/ar2014/sd2014.pdf>.
- Corman, S., Kuhn, T., McPhee, R., Dooley, K., 2002. Studying complex discursive systems: Centering resonance analysis of organizational communication. *Hum. Commun. Res.* 28 (2), 157–206.
- Deshpande, R., Sucher, S.J., Winig, L., 2011. *Cipla 2011*. Ivey Case Publishing.
- Drucker, P.F., 1954. *The Practice of Management*, first ed. Harper, New York, NY.
- Dyck, B., Caza, A., Starke, F., 2018. *Management: Financial, Social, and Ecological Well-Being*. Sapajo Publishing, Winnipeg, Canada.
- Eisenhardt, K.M., 1989. Building theory from case study research. *Acad. Manag. Rev.* 14, 532–550.
- Elkington, J., 1997. *Cannibals with Forks: the Triple Bottom Line of 21st Century Business*. Capstone, Gabriola Island, BC.
- Environmental Performance Index, 2016. *Global Metrics for the Environment*. Yale Center for Law and Policy, Yale University. [http://epi.yale.edu/sites/default/files/2016EPI\\_Full\\_Report\\_opt.pdf](http://epi.yale.edu/sites/default/files/2016EPI_Full_Report_opt.pdf).
- Ferraro, F., Pfeffer, J., Sutton, R.I., 2005. Economics language and assumptions: how theories can become self-fulfilling. *Acad. Manag. Rev.* 30 (1), 8–24.
- Fiss, P.C., 2007. A set-theoretic approach to organizational configurations. *Acad. Manag. Rev.* 32, 1180–1198.



- Fiss, P.C., 2011. Building better causal theories: a fuzzy set approach to typologies in organization research. *Acad. Manag. J.* 54, 393–420.
- George, W.W., Kindred, N., 2010. Kent Thiry: “Mayor” of DaVita. Ivey Case Publishing.
- Glavas, A., Mish, J., 2015. Resources and capabilities of Triple Bottom Line firms: going over old or breaking new ground? *J. Bus. Ethics* 127, 623–642.
- Graafland, J.J., 2018. Ecological impacts of the ISO14001 certification of small and medium sized enterprises in Europe and the mediating role of networks. *J. Clean. Prod.* 174, 273–282.
- Hahn, T., Pinkse, J., Preuss, L., Figge, F., 2015. Tensions in corporate sustainability: towards an integrative framework. *J. Bus. Ethics* 127, 297–316.
- Hansen, E.G., Schaltegger, S., 2016. The sustainability balanced scorecard: a systematic review of architectures. *J. Bus. Ethics* 133, 193–221.
- Hart, S.L., 1995. A natural resource based view of the firm. *Acad. Manag. Rev.* 20, 986–1014.
- 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, 677–694.
- Howard, L.W., 1998. Validating the competing values model as a representation of organizational cultures. *Int. J. Organ. Anal.* 6 (3), 231–250.
- Husted, B.W., de Sousa-Filho, J.M., 2017. The impact of sustainability governance, country stakeholder orientation, and country risk on environmental, social, and governance performance. *J. Clean. Prod.* 155, 93–102.
- Jianzhong, L., Zhao, T., 2016. Social Responsibility: Chinese and MNCs Are Leading the Way. May 17. *China Daily*. [http://www.chinadaily.com.cn/business/2016-05/17/content\\_25324074.htm](http://www.chinadaily.com.cn/business/2016-05/17/content_25324074.htm).
- Joyce, A., Paquin, R.L., 2016. The triple layered business model canvas: a tool to design more sustainable business models. *J. Clean. Prod.* 135, 1474–1486.
- Kauffman, C.M., Martin, P.L., 2016. Can rights of nature make development more sustainable? Why some Ecuadorian lawsuits succeed and others fail. *World Dev.* 92, 130–142.
- Kauflin, J., 2017. The World's Most Sustainable Companies. *Forbes*. <https://www.forbes.com/sites/jeffkauflin/2017/01/17/the-worlds-most-sustainable-companies-2017/#b8f63e34e9d9>.
- Kirby, W.C., McFarlan, W.F., Manty, T.Y., Donovan, G.A., 2009. China Mobile's Rural Communications Strategy. Harvard Business School.
- Kiron, D., Kruschwitz, N., Rubel, H., Reeves, M., Fuisz-Kehrback, S.-K., 2013. Sustainability's Next Frontier: Walking the Talk on the Sustainability Issues that Matter Most: Findings from the 2013 Sustainability and Innovation Global Executive Study and Research Project. MIT Sloan Management Review, December, pp. 1–26.

- Kramer, L., 2010, April 30. European corporations heed investor concerns about the environment. Institutional Investor.  
<https://www.institutionalinvestor.com/article/b150qcghgn1k80/european-corporations-heed-investor-concerns-about-the-environment>.
- Kruskal, W.H., Wallis, W.A., 1952. Use of ranks in one-criterion variance analysis. *J. Am. Stat. Assoc.* 47, 583–621.
- Larsson, R., 1993. Quantitative analysis of patterns across case studies. *Acad. Manag. J.* 36, 1515–1546.
- Larsson, R., Finkelstein, S., 1999. Integrating strategic, organizational, and human resource perspectives on mergers and acquisitions: a case survey of synergy realization. *Organ. Sci.* 10 (1), 1–26.
- Linnenluecke, M.K., Griffiths, A., 2010. Corporate sustainability and organizational culture. *J. World Bus.* 45, 357–366.
- Linnenluecke, M.K., Russell, S.V., Griffiths, A., 2009. Subcultures and sustainability practices: the impact on understanding corporate sustainability. *Bus. Strateg. Environ.* 18 (7), 432–452.
- Locke, E.A., Latham, G.P., 1990. *A Theory of Goal Setting and Task Performance*. Prentice Hall, Englewood Cliffs, NJ.
- MacCormack, A., Dunn, B., Kemerer, C.F., 2012. *Research in Motion: the Mobile OS Platform War*. Harvard Business School.
- MacLean, T., 2002. Reframing organizational misconduct: a study of deceptive sales practices at a major life insurance company. *Bus. Soc.* 41 (2), 242–250.
- Malbašić, I., Rey, C., Potočan, V., 2015. Balanced organizational values: from theory to practice. *J. Bus. Ethics* 130, 437–446.
- Maletič, M., Maletič, D., Gomišček, B., 2018. The role of contingency factors on the relationship between sustainability practices and organizational performance. *J. Clean. Prod.* 171, 423–433.
- Meyer, A.D., Tsui, A.S., Hinings, C.R., 1993. Configurational approaches to organizational analysis. *Acad. Manag. J.* 36, 1175–1195.
- McWilliams, A., Parhankangas, A., Coupet, J., Welch, E., Barnum, D.T., 2016. Strategic decision making for the triple bottom line. *Bus. Strateg. Environ.* 25 (3), 193–204.
- Miles, R.E., Snow, C.C., 1978. *Organizational Strategy, Structure, and Process*. McGraw-Hill, New York.
- Miller, D., 1990. *The Icarus Paradox: How Exceptional Companies Bring about Their Own Downfall*. Harper Business, New York.
- Miller, D., 1993. The architecture of simplicity. *Acad. Manag. Rev.* 18, 116–138.

- Miller, D., 2018. Challenging trends in configuration research: where are the configurations? *Strat. Organ.* 16 (4), 453–469.
- Miller, D., Xu, X., 2019. MBA CEOs, short-term management and performance. *J. Bus. Ethics* 154 (2), 285–300.
- Naor, M., Jones, J.S., Bernardes, E.S., Goldstein, S.M., Schroeder, R., 2014. The culture-effectiveness link in a manufacturing context: a resource-based perspective. *J. World Bus.* 49, 321–331.
- Nokia People and Planet Report, 2016.  
[https://www.nokia.com/sites/default/files/nokia\\_people\\_and\\_planet\\_report\\_2016\\_protecting\\_2.pdf](https://www.nokia.com/sites/default/files/nokia_people_and_planet_report_2016_protecting_2.pdf).
- Pisano, G.P., Johnson, R., Knoop, C.I., 2011. *MorphoSys AG: the Evolution of a Biotechnology Business Model*. Ivey Case Publishing.
- Porter, M.E., Kramer, M.R., 1999. Philanthropy's new agenda: creating value. *Harv. Bus. Rev.* (77), 121–131. November-December.
- Quinn, R.E., 1990. *Beyond Rational Management: Mastering the Paradoxes and Competing Demands of High Performance*. Jossey-Bass, San Francisco, CA.
- Quinn, R.E., Faerman, S.R., Thompson, M.P., McGrath, M.R., 1996. *Becoming a Master Manager: A Competency Framework*, second ed. John Wiley and Sons, New York.
- Quinn, R.E., Kimberly, J.R., 1984. Paradox, planning, and perseverance: guidelines for managerial practice. In: Kimberly, J.R., Quinn, R.E. (Eds.), *Managing Organizational Transitions*. Dow Jones–Irwin, Homewood, IL, pp. 295–313.
- Quinn, R.E., Rohrbaugh, J., 1983. A spatial model of effectiveness criteria: toward a competing values approach to organizational analysis. *Manag. Sci.* 29, 363–377.
- Reyes-Santiago, M.D.R., Sánchez-Medina, P.S., Díaz-Pichardo, R., 2017. Eco-innovation and organizational culture in the hotel industry. *Int. J. Hosp. Manag.* 65, 71–80.
- Rizzi, F., Frey, M., Testa, F., Appolloni, A., 2014. Environmental value chain in green SME networks: the threat of the Abilene paradox. *J. Clean. Prod.* 85, 265–275.
- Robbins, G.E., Page, M.A., 2012. January. Sustainability initiatives: a competing values framework. *Compet. Forum* 10 (1), 176–181. American Society for Competitiveness.
- Russell, S.V., Haigh, N., Griffiths, A., 2007. Understanding corporate sustainability: recognizing the impact of different governance systems. In: Benn, S., Dunphy, D. (Eds.), *Corporate Governance and Sustainability: Challenges for Theory and Practice*. Routledge, London, UK, pp. 36–56.
- Sahai, A.K., 2013. *Learning from Evolution: A Study of Acer's Corporate Strategy*. Sloan School of Management, MIT. [https://laofutze.files.wordpress.com/2010/07/learning-from-evolution-a-study-of-acer\\_s-corporate-strategy.pdf](https://laofutze.files.wordpress.com/2010/07/learning-from-evolution-a-study-of-acer_s-corporate-strategy.pdf).
- Schein, E.H., 1985. *Organizational Culture and Leadership: A Dynamic View*. Jossey Bass, San Francisco.

- Schein, E.H., 1996. Culture: the missing concept in organization studies. *Adm. Sci. Q.* 41, 229–240.
- Scott, W.R., 2003. *Organizations: Rational, Natural, and Open Systems*, fifth ed. Prentice-Hall, Upper Saddle River, NJ.
- Sharma, K., May 10, 2016. Can Acer Stay Relevant in the Post-PC era? *The Australian*. <http://www.theaustralian.com.au/business/technology/can-acer-stay-relevant-in-the-postpc-era/news-story/6368298bc4dc5e215c2b81b4b9e84d09>.
- Shih, S., 2005. *Millennium Transformation: Change Management for New Acer*. Aspire Academy Series. [http://www.stanshares.com.tw/StanShares/upload/tbBook/1\\_20100817144639.pdf](http://www.stanshares.com.tw/StanShares/upload/tbBook/1_20100817144639.pdf).
- Smith, S., 2015. Identifying attribution in ESG. In: 3rd Annual CSR Investing Summit. [http://www.csrinvestingsummit.org/uploads/sntrcri/pdf/Identifying\\_Attribution\\_in\\_ESG\\_by\\_Sarah\\_Smith.pdf](http://www.csrinvestingsummit.org/uploads/sntrcri/pdf/Identifying_Attribution_in_ESG_by_Sarah_Smith.pdf).
- Sustainable Society Index, 2016. accessed November 22, 2017. <http://www.ssfindex.com>.
- Surroca, J., Tribó, J.A., Waddock, S., 2010. Corporate responsibility and financial performance: the role of intangible resources. *Strat. Manag. J.* 31, 463–490.
- Walker, K., Wan, F., 2012. The harm of symbolic actions and green-washing: corporate actions and communications on environmental performance and their financial implications. *J. Bus. Ethics* 109 (2), 227–242.
- Walker, K., Na, N., Dyck, B., 2015. Recipes for successful sustainability: empirical organizational configurations for strong corporate environmental performance. *Bus. Strateg. Environ.* 24 (1), 40–57.
- Walker, K., Na, N., Zhang, Z., 2018. The mirror effect: corporate social responsibility, corporate social irresponsibility, and firm performance in coordinated market economies and liberal market economies. *Br. J. Manag.* 30 (1), 151–168.
- Walker, R., Wilson, J., 2012. *Nokia's Supply Chain Management*. Harvard Business School.
- Wasserman, N., Chen, M.S., Wong, K.C., 2011. *Founder-Ceo Succession at Acer*. Harvard Business School.
- Weber, M., 1978. *Economy and Society: an Outline of Interpretive Sociology*, vol. 1. University of California Press, Berkeley, CA.
- Wolf, J., 2014. The relationship between sustainable supply chain management, stakeholder pressure and corporate sustainability performance. *J. Bus. Ethics* 119, 317–328.
- Yin, R.K., 1994. *Case Study Research: Design and Methods*. Sage, Thousand Oaks, CA.
- Zammuto, R.F., Gifford, B., Goodman, E.A., 2000. Managerial ideologies, organization culture, and the outcomes of innovation. In: M Ashkanasy, N., Wilderom, C.M., Peterson, M.F. (Eds.), *Handbook of Organizational Culture and Climate* (261–278). Sage, Thousand Oaks, CA.

Zammuto, R.F., Krakower, J.Y., 1991. Quantitative and qualitative studies of organizational culture. *Res. Organ. Change Dev.* 5, 83–114.

Zhang, J., Chiu, R., Wei, L.Q., 2009. On whistleblowing judgment and intention: the roles of positive mood and organizational ethical culture. *J. Manag. Psychol.* 24 (7), 627–649.