Do consistent corporate cultures have better business performance? Exploring the interaction effects

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Abstract

Past research has shown a close connection between organizational culture and effectiveness, but nearly all of this research has examined the direct effects of culture on performance outcomes. In contrast, this article examines the idea that the effects of cultural consistency on organizational performance may differ depending on the levels of other culture traits. Data from 88,879 individuals in 137 public companies using the Denison Organizational Culture Survey were paired with three objective measures of

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organizational performance and used to examine the interaction effects of consistency with mission, adaptability, and involvement. Consistency shows a significant positive interaction with all three traits in predicting market-to-book ratios and sales growth. Firms that are both consistent and adaptable, for example, are high performers. In contrast, the results show a significant negative interaction when predicting return on assets. The implications of these results are discussed with respect to future culture and effectiveness research.

Keywords

organizational culture, organizational effectiveness, organizational performance, culture strength, interactive effects

Introduction

Organizational culture has long been regarded as an important influence on an organization's effectiveness (Deal and Kennedy, 1982; Peters and Waterman, 1982; Schein, 1992; Wilkins and Ouchi, 1983). The values, beliefs, and assumptions that guide behavior and facilitate shared meaning (Alvesson, 2011; Denison, 1990; Schein, 1992; Smircich, 1983), have been empirically linked to effectiveness in a series of studies (e.g. Denison, 1984, 1990; Denison and Mishra, 1995; Gordon and DiTomaso, 1992; Kotter and Heskett, 1992; Ouchi, 1981; Sørenson, 2002). But while most researchers have focused on the direct impact of specific cultural traits, Sackmann's recent review of the culture–performance literature has presented a more complex picture that highlights the potential of examining contingent, interactive relationships (Sackmann, 2010).

Prior research supporting the links between specific cultural traits and specific performance outcomes represent significant progress, but it may also present an overly simplistic view of culture's impact on performance. Organizations always present a unique combination of cultural characteristics (Deal and Kennedy, 1982) and there are many ways that different aspects of an organization's culture may combine to influence performance. As Yilmaz and Ergun (2008) point out, culture scholars have long noted the paradoxical nature of different cultural orientations, such as internal integration and external adaptation, and have pointed out that organizations need to face contradictory challenges at the same time (Cameron, 1986; Denison, 1990). 'Effective organizations are those that are able to resolve these contradictions without relying on simple tradeoffs' (Fey and Denison, 2003: 688). Nonetheless, very few studies have examined how different cultural strengths and weaknesses interact to predict effectiveness.

This article focuses on the cultural trait of consistency as a prime example of one area of the empirical culture literature that has shown mixed results and may benefit from a closer look at the underlying interaction effects. Organizations with high levels of consistency have a shared set of core values, and a high level of agreement and normative integration. There is some evidence to support the idea that consistency has a direct impact on effectiveness (Denison and Mishra, 1995), but there is also reason to suspect that consistency will interact with other cultural traits to predict organizational performance (Schneider et al., 2002).

Understanding cultural consistency

All definitions of organizational culture that we could identify made reference to integration, value consensus, or agreement, and nearly all included the word 'shared' (Ashkanasy et al., 2010). But despite the central importance of consistency to definitions of culture, its treatment in the organizational culture literature is often problematic.

Saffold's (1988) review of the connection between 'strong' cultures and organizational performance is the earliest conceptual treatment of this issue in the culture literature. Like Flynn and Chatman (2001), Saffold pointed out that the concept of cultural strength is often used in two very different ways in the culture literature. In the first instance, the word strong is used as a synonym for 'positive:' Strong cultures are a characteristic of strong organizations with strong people that have strong performance. The second meaning of strong is as a synonym for 'shared,' indicating the degree to which values, mindset, and behaviors are well integrated, held in common, cohesive, and often resistant to outside influence. Flynn and Chatman argue convincingly that the second meaning is far more useful for researchers and practitioners alike, because it avoids the tautology associated with strong culture = strong performance and because it describes an important characteristic of an organizational culture, and its consistency (Martin, 1992), that may or may not be related to organizational performance.

A third definition of cultural strength and consistency can also be taken from the literature on climate strength (Schneider et al., 2002). These authors offer an empirical definition of climate strength as the degree of variability in the perceptions of an element of an organization's context, with low variability indicating strong climates and high variability indicating weak climates; strength is taken to be represented by low variability in perceptions of some other element of the organizational context.

These definitions pose some important choices for empirical culture researchers. Should 'culture strength' be assessed through the variance in perceptual measures? Or should 'culture strength' be assessed through perceptions of the degree to which core values are shared in the organization? Or should 'culture strength' be assessed through the perceptions of the degree to which an organizational system is well integrated? Examples of all of these methods exist in the literature, suggesting that there may be merit to several different approaches.

Most of the empirical studies in the culture literature have taken a combination of the second and third approaches, asking organizational members to respond about their perception of the degree to which core values are shared, or the degree to which the organizational system is well-integrated (Barnes et al., 2006; Kotter and Heskett, 1992; Lee and Yu, 2004; Sackmann, 2010; Sørenson, 2002; Tsui et al., 2006). Empirical studies in the climate literature, in contrast, usually favor using the variance in responses as a measure of strength, concluding that low variability in the perceptions of organizational members is evidence of a 'strong climate' (Schneider et al., 2002).

In this article, we have used the term consistency to avoid the multi-faceted confusion that surrounds the term strength. We agree that consistency refers to the level of cohesion, integration, or agreement around values and norms, and thus we are most closely aligned with Saffold (1988) and Flynn and Chatman's (2001) second definition of culture strength as the degree to which cultural elements are integrated or shared.

We certainly agree with Schneider et al. (2002) that low variability may be one good indicator of consistency, but also acknowledge that multiple empirical approaches to this topic have been shown to be useful in the literature. Thus, in this article, we have described consistency in terms of normative integration, and used a set of measures that has been developed to assess this trait by asking members about their perceptions of the degree to which values and behaviors are well-integrated and widely shared.

Measures of organizational culture

Several approaches to the measurement of organizational culture have been developed through the years, each presenting a method for studying organizational cultures by measuring values and behavioral norms (Cooke and Rousseau, 1988; Hofstede et al., 1990; O'Reilly et al., 1991). Reviews of existing measures of organizational culture are provided by Ashkanasy et al. (2000) and Sackmann (2006). Each of these approaches grew out of a specific research agenda and defined the relevant dimensions of culture in a way that served that research agenda. This present study uses an approach to measuring organizational culture that has been developed from a stream of research linking organizational culture and effectiveness (Denison, 1984, 1990, 2000; Denison and Mishra, 1995; Denison et al., 2003; Fey and Denison, 2003). This research has focused directly on those aspects of organizational culture that appear to influence organizational effectiveness (Cameron and Freeman, 1991; Cameron and Quinn, 1999; Gordon and DiTomaso, 1992; Kotter and Heskett, 1992; Sackmann, 2010; Sørenson, 2002). The Denison model of organizational culture is also attractive for this research because it is one of the few models that explicitly includes a measure of culture strength such as consistency. This model conceptualizes culture along four dimensions – involvement, consistency, adaptability, and mission – and provides a useful and valid framework for investigating the relationship between organizational culture and performance.

Following Schein's (1992) definition of culture as the 'shared basic assumptions that the group learns as it solves the problems of internal integration and external adaptation,' the Denison model places underlying beliefs and assumptions at the core of the model. These beliefs and assumptions provide the foundation from which behavior and action spring. Accordingly, Denison (1990) defines organizational culture as the 'underlying values, beliefs and principles that serve as the foundation for an organization's management system as well as the set of management practices and behaviors that both exemplify and reinforce those basic principles' (p. 2). This definition builds on the underlying beliefs and assumptions, but also emphasizes more measureable values and behavioral norms. While acknowledging the central role of deep-level assumptions, this approach also allows for the comparison of organizations at the mid-range level of values and behavioral norms that lie between the deep-rooted assumptions and the surface-level artifacts. This approach is consistent with other comparative measures of organizational culture (Cameron and Quinn, 1999; Cooke and Rousseau, 1988; Denison, 1996; Hofstede et al., 1990).

The organizational culture trait of *involvement* focuses on the extent to which employees are committed to their work, feel a sense of ownership, and have input into decisions that affect their work. As noted by Fey and Denison (2003), effective organizations empower their employees, use teamwork, and continuously develop the capacity of their

employees (Becker, 1964; Deal and Kennedy, 1982; Lawler, 1996; Likert, 1961; Peters and Waterman, 1982).

Consistency refers to the level of cohesion, integration or agreement around values and norms. Behavior is rooted in a set of core values, individuals are able to reach agreement, and the organization's activities are well coordinated and integrated. As many have argued, organizations are more effective when they are consistent and well-integrated (Calori and Sarnin, 1991; Kotter and Heskett, 1992; Saffold, 1988). This type of consistency is a powerful source of stability and internal integration.

Adaptability is the organization's capacity for internal change in response to external conditions (Denison and Mishra, 1995). Highly internally-focused and integrated organizations can have difficulty adapting to external market demands (Lawrence and Lorsch, 1967), hence it is also important to ensure a capacity for creating change, understanding the customer and meeting their needs, and continuing to learn as an organization (Argyris and Schön, 1978; Fey and Denison, 2003; Nadler, 1998; Senge, 1990).

Finally, the *mission* trait reflects the degree to which an organization has direction and clarity of purpose. Effective organizations pursue a mission that provides meaning and direction for their employees (Denison and Mishra, 1995). These organizations have a clear purpose and direction, goals and objectives, and a vision for the future (Fey and Denison, 2003; Mintzberg, 1987).

These four traits are operationalized by three factors or indices, as shown in Table 1. The traits of adaptability and mission together represent an external focus; the traits of involvement and consistency represent an internal focus; the traits of mission and consistency together represent a focus on stability; and the traits of adaptability and involvement together represent the organizations' flexibility.

Organizational culture and effectiveness

As noted previously, empirical research has demonstrated positive relationships between organizational culture and various indices of organizational effectiveness. To provide a few examples, Denison and Mishra (1995) found that while mission was generally the strongest predictor, all four traits of the Denison model were positively related to objective performance metrics. Other researchers such as Gordon and DiTomaso (1992) found culture strength and adaptability to relate to short-term performance using data collected from 850 managers, and Deshpandé and colleagues (1993) found competitive and entrepreneurial cultures to be positively related to performance. More recently, Den Hartog and Verburg (2004) found innovative culture orientation to relate to high performance work practices and Denison et al. (2003) demonstrated the culture-performance relationship across North America, Europe, and Asia. Even more recently, Gillespie et al. (2008) showed a positive relationship between organizational culture and independently obtained measures of customer satisfaction for two companies in different industries. Sackmann (2010) presents an extensive review of the growing body of evidence supporting the link between culture and performance.

Despite this body of research there are important questions that have yet to be fully addressed. Without doubt, previous research has contributed significantly to our understanding of the roles of specific cultural traits and values as predictors of various

Table 1 Denison model traits, indices, and definitions

Trait	Index	Definition
Involvement		Employees are committed to their work, feel a sense of ownership, and have input.
	Capability development	The organization continually invests in the development of employees' skills in order to stay competitive and meet on-going business needs.
	Team orientation	Value is placed on working cooperatively toward common goals to which all employees feel mutually accountable. The organization relies on team effort to get work done.
	Empowerment	Individuals have the authority, initiative, and ability to manage their own work. This creates a sense of ownership and responsibility toward the organization.
Consistency		The level of cohesion, integration or agreement around values and norms.
	Coordination/ Integration	Different functions and units of the organization are integrated and are able to work together to achieve common goals.
	Agreement	The organization is able to reach agreement on critical issues. This includes the underlying level of agreement and the ability to reconcile differences when they occur.
	Core values	Members of the organization share a set of values that create a strong sense of identity and a clear set of expectations.
Adaptability		Organizational capacity to change in response to external conditions.
	Creating change	The organization is able to create adaptive change. The organization is able to read the business environment, quickly react to the current changes, and anticipate future changes.
	Customer focus	The organization understands and reacts to the customer, and anticipates their future needs. It reflects the degree to which the organization is driven by a concern to satisfy the customer.
	Organizational learning	The organization receives, translates, and interprets signals from the environment into opportunities for encouraging innovation, gaining knowledge, and developing capabilities.
Mission		Reflects the degree to which an organization has direction and clarity of purpose.
	Strategic direction	There is a clear strategy that gives meaning, purpose, and direction.
	Goals and objectives	Leadership has 'gone on record' about ambitious, but realistic goals that are understood and measured.
	Vision	There is a long-term vision that creates excitement and motivation and is not compromised by short-term thinking.

performance measures. But because the majority of the culture–effectiveness literature has focused on examining the direct effects of specific culture traits, there is little understanding of how these traits may interact to impact effectiveness. A notable exception is a recent study by Yilmaz and Ergun (2008) who, utilizing a manufacturing sample from Turkey, found that imbalanced combinations of certain pairs of traits of the Denison model exert positive or negative effects on performance. In the present study, we seek to further understand how culture traits interact to relate to effectiveness on a broader sample of organizations. As described in more detail below, we focus particularly on how other culture traits interact with cultural consistency to predict three objective performance metrics.

As previously noted, the cultural traits of involvement, consistency, adaptability, and mission indeed relate to important indicators of organizational performance. More specifically, these attributes have displayed statistically-significant and discriminating effects on subjective perceptions of sales growth, market share, profitability, quality, new product development, employee satisfaction, and overall performance (e.g. Denison et al., 2003, forthcoming) as well as on objective indicators such as return-on-assets, sales growth, and market-to-book ratio (e.g. Denison and Mishra, 1995). While both subjective and objective performance metrics are important, the current study focuses on the objective indicators of *market-to-book* ratio (MtB), *sales growth*, and *return-on-assets* (ROA). As independent measures of effectiveness, they overcome the common method bias of using subjectively-reported indicators of effectiveness that are commonly used in this stream of research. Each of these metrics provides a slightly different perspective and, taken together, provide a comprehensive picture of effectiveness. MtB is a market-based measure, with the stock market valuation incorporating the value of existing opportunities and future opportunities that have yet to be realized (Carton and Hofer, 2008). Accounting-based measures (e.g. ROA) are primarily measures of past operational efficiency, while sales growth is a measure of the growth of a company.

Toward an understanding of cultural interactions

An interactive model suggests that the relationship between a given culture trait and effectiveness depends on the levels of other culture traits. While many possibilities exist, the relationships between consistency and organizational effectiveness are perhaps most likely to vary as a function of other organizational traits. That is, rather than exhibiting solely main effect relationships with effectiveness, consistency may relate either positively or negatively to effectiveness depending on the levels of the other culture traits. An interactive model allows for *both* the levels of each construct (main effects) *and* how they interact to predict effectiveness.

More than other aspects of culture, the concept of consistency has been discussed in both positive and negative lights. For example, cultural consistency is associated with more reliable and sustained performance but also with deficiencies in areas such as flexibility, that can negatively impact performance (e.g. Kotter and Heskett, 1992; Sørenson, 2002; Tushman and O'Reilly, 1997). Further, Yilmaz and Ergun (2008) found consistency to relate positively to performance when looking at bivariate correlations, but found it to relate negatively to some performance metrics when other aspects of culture were

controlled for. Thus it seems valuable to examine interaction effects to better understand the variable effects of consistency.

As described previously, consistency represents value alignment and internal integration in organizations. In general this should be a good thing, and Sørenson (2002) highlights the positive impact that cultural consistency has on execution in organizations. However, it is important to note that cultural consistency as measured in the current study is a general measure of whether there are strong core values, agreement and coordination within the organization, and is not a measure of the specific values or content there is agreement and integration around. We argue that this consistency may positively or negatively relate to performance, depending on whether it is coupled with strengths or weaknesses in other areas of culture shown to relate to effectiveness. Consistency should be positively related to performance especially when the organization is high on other important areas of culture shown to relate to effectiveness. However, when organizations are deficient on one or all of the other traits, consistency may actually be a *detriment* to performance because the organization is consistently resisting change and the influence of the market (adaptability), consistently ignoring the development of their people (involvement), and consistently ignoring the long-term future of the organization (mission). Thus, while we now turn our attention to each interactive relationship separately, we generally expect consistency to relate more positively to performance when other aspects of culture are strong and less positively, perhaps even negatively, when they are weak.

Combining consistency and mission. A high degree of consistency combined with a clear mission may be a key to success. As Sørenson (2002) points out, when there is cultural consistency around corporate goals and strategy, there is less room for debate around the firm's best interests and employees are able to more easily take the appropriate actions in uncertain circumstances, likely benefiting organizational performance. In contrast, solely having consistency can impede the exploration of strategic positioning in the marketplace (March, 1991) and a high degree of consistency combined with a weak or ill-formed mission may be a recipe for disaster. Thus, superior business performance is a result of having *both* mission and consistency – to be able to explore strategic directions and exploit internal capabilities.

Combining consistency and adaptability. We expect a similar pattern for the trait of adaptability. By not adequately sensing the changing environment, firms that are high in consistency, yet low in adaptability, may continue persisting with inappropriate routines that do not take new conditions into account. Likewise, the sense of normative order that consistency provides may also impede the search for new products and services and instead promote the incremental refinement of existing technologies (March, 1991). In addition having strengths in consistency and in adaptability is likely to positively impact organizational performance as these organizations are able to both accurately assess and respond to the environment as well as have the internal alignment and integration to capitalize on that effectively (Sørenson, 2002).

Combining consistency and involvement. High levels of consistency result in greater normative control in the organization and a common mindset (Gelfand et al., 2006; O'Reilly

and Chatman, 1996). When consistency is combined with a high level of involvement, organizations display a well understood system for incorporating input from a diverse range of individuals in decisions and actions. As previously theorized, when environments change a diversity of responses is functional for survival (Campbell, 1965; Weick, 1979). In contrast, when more autocratic organizations are very consistent in excluding diversity, they may be less effective. High levels of consistency can also mean that newcomers are more likely to be socialized and integrated, and this high level of new variety can increase the variety of perspectives and solutions that can be brought to bear on responding to environmental changes (March, 1991). Thus, we expect high consistency with little involvement to be detrimental to performance, but in combination these traits can promote creative adaptation to the environment, while maintaining social order and normative control.

These proposed interactions between consistency and mission, adaptability, and involvement lead to our three hypotheses:

Hypothesis 1a: Consistency will interact with mission such that consistency will be less positively related to effectiveness (i.e. MtB, sales growth, and ROA) when there are lower levels of mission and will be more positively related to effectiveness at higher levels of mission.

Hypothesis 1b: Consistency will interact with adaptability such that consistency will be less positively related to effectiveness (i.e. MtB, sales growth, and ROA) when there are lower levels adaptability and will be more positively related to effectiveness at higher levels of adaptability.

Hypothesis 1c: Consistency will interact with involvement such that consistency will be less positively related to effectiveness (i.e. MtB, sales growth, and ROA) when there are lower levels of involvement and will be more positively related to effectiveness at higher levels of involvement.

Method

Our sample was a set of 137 public companies that had completed the Denison Organizational Culture Survey (Denison, 1990) from 1995–2005. The greatest number of companies surveyed in a year was 29 companies in 2003 and the least number surveyed was one company in 1995. This provides a broad sample of companies over many years to limit the influence of economic conditions within any time period. The average number of employees surveyed over the 10-year period was 660 per company (SD = 1448), with a range of 25 to 12,018, for a total of 88,879 respondents. Although the primary analyses are at the organization level, matching case-level data were available for 98 of these companies for purposes of calculating rater agreement and reliability. The survey was administered primarily online, although in earlier years some paper surveys were also completed.

There are 30 industries represented in the sample as determined by the two-digit SIC code given by COMPUSTAT, which categorizes a company based on which activities earn the greatest portion of revenue. The diversity of industries helps counteract any distinct effects based on industry-specific conditions. Within the sample, 84.7 percent of

the companies are incorporated in the USA, making our conclusions primarily applicable to US business, although existing empirical studies provide little indication that the effects of the culture traits vary substantially across cultures (Denison et al., 2003; Fey and Denison, 2003).

Measures

Organizational culture. The 60-item Denison Organizational Culture Survey (DOCS: Denison, 1990) measures four traits (involvement, consistency, adaptability, and mission), each of which contain three indexes, for a total of 12 indices. Each index comprised five items, so each trait contains 15 items. The DOCS utilizes a five-point scale, ranging from 1 = Strongly Disagree to 5 = Strongly Agree. The factor structure and scale reliabilities have been confirmed in prior studies, one of which includes data that partially overlap with the sample of the current study (Denison et al., forthcoming), and data have consistently demonstrated good fit to the theorized model of organization culture (e.g. Denison et al., forthcoming; Yilmaz and Ergun, 2008). To confirm the structure on the current sample, we conducted an individual-level CFA for respondents from the 98 firms for which individual-level data were available. Data from this sample of 68,737 employees showed reasonable fit to the theorized model. More specifically, the data fit a second-order factor model where the 60 items formed 12 indexes, which in turn formed four higher-order traits ($\chi^2 = 231425$; d.f. = 1692; RMSEA = .044; CFI = .875; NNFI=.869; SRMR = .049). Although the CFI and NNFI values are just below common guidelines for good fit, RMSEA and SRMR are suggestive of close model fit (Kline, 2005). This model fit better than an alternative model omitting the 12 intermediate indices ($\Delta\chi^2(12) = 61,236$, $p < .001$). For the current sample, Cronbach α reliabilities, calculated at the organizational level, were .94, .92, .89, and .96 for involvement, consistency, adaptability, and mission, respectively.

For the purposes of our analysis, all data were aggregated to the organization level. Each company's scores are the mean of the responses provided by all respondents within the company, consistent with a referent-shift consensus model (Chan, 1998). We examined commonly used statistics to justify aggregation, including both $r_{WG(J)}$ and Intraclass Correlation Coefficients (ICCs). A separate $r_{WG(J)}$ was calculated for each trait as outlined by James et al. (1984). In addition, LeBreton and Senter (2008) recommended reporting r_{WG} results based on multiple null distributions. Thus we report results using a uniform null distribution and a slightly skewed null distribution, which allows for rater bias. The mean and standard deviation of these values, along with the corresponding ICC(K) and ICC(1) values, are reported for the 98 organizations for which individual-level data were available (see Table 2). The $r_{WG(J)}$ values calculated suggest moderate to strong agreement. ICC(K) values averaged .98, indicating strong agreement + reliability (LeBreton and Senter, 2008), and ICC(1) values (using Bliese and Halverson's 1998 correction for unequal group sizes) averaged .06 across the four traits, suggesting a moderate amount of variance owing to organization membership.

Organizational effectiveness. Our sample comprises publicly-traded companies, allowing access to financial records through Standard and Poor's COMPUSTAT database. This research uses the performance metrics of market-to-book ratio (MtB), sales growth, and

Table 2 Aggregation statistics

DOCS Trait	$r_{WG(J)}$ uniform		$r_{WG(J)}$ slight skew		ICC(K)	ICC(1)	F
	Mean	SD	Mean	SD			
Involvement	.84	.04	.62	.18	.98	.06	54**
Consistency	.85	.03	.67	.11	.98	.07	147**
Adaptability	.85	.03	.67	.13	.97	.04	44**
Mission	.86	.03	.69	.11	.99	.08	145**

Note: **$p < .01$; Organizational-level $N = 98$; Individual-level $N = 85,355$.

return-on-assets (ROA). ROA is net income divided by total assets (with total assets being the sum of current assets, net property, plant, and equipment, and other non-current assets). Sales growth is computed by taking the annual percent gain in total sales. MtB is the ratio of market price of a company's shares over its book value of equity, calculated by taking stock price (fiscal year close) divided by (equity/common shares outstanding). The performance measure for each company was transformed to be a relative indicator from the date of the survey, and two different lag times were assessed. For example, if a firm was surveyed in 1999, its year 1 ROA and MtB are for the year ending 2000, which allows for a reasonable lag effect from the survey date; year 2 ROA and MtB are for the year ending in 2001. For sales growth, if a firm was surveyed in 2003, its year 1 to 2 sales growth is growth experienced over the years 2004–5, while its year 2 to 3 sales growth is growth experienced over 2005–6.

Control variables: We considered industry, year surveyed, sample size, assets, and organization size as potential control variables. However, we did not find any of these potential control variables to relate to the IVs or DVs of this study in a systematic way. Further, including these variables as controls in these analyses did not significantly impact on the conclusions drawn from the results. Thus to conserve power, we did not include these variables as controls in these analyses.

Results

Descriptive statistics for study variables are provided in Table 3. As can be seen in Table 3, significant bivariate relationships were observed between all four traits and market-to-book ratio at year 2 and both mission and involvement at year 1. Conversely, neither sales growth nor ROA were significantly related to culture in the bivariate results.

The hypotheses regarding the conditional effects of consistency were then tested via hierarchical regression. The main effects of consistency, involvement, mission, and adaptability were entered in the first step of the regression, with the relevant interaction terms entered in the second steps. The four culture traits were grand mean centered prior to inclusion in the regressions (Cohen et al., 2003).

Hypothesis 1 proposed that relationships between consistency and performance would be moderated by mission, adaptability, and involvement. Providing support for

Table 3 Descriptive statistics and intercorrelations among study variables

	N	Mean	SD	1	2	3	4	5	6	7	8	9
1. Involvement	137	3.41	0.20	(.94)								
2. Consistency	137	3.27	0.18	.78*	(.92)							
3. Adaptability	137	3.23	0.17	.73*	.65*	(.89)						
4. Mission	137	3.31	0.23	.79*	.77*	.73*	(.96)					
5. MtB year 1	111	3.62	3.42	.24*	.16	.15	.19*					
6. MtB year 2	98	3.28	2.59	.30*	.20*	.22*	.23*	.80*				
7. Sales Growth year 1 to 2	117	0.12	0.23	−.06	−.02	−.08	−.04	.02	−.08			
8. Sales Growth year 2 to 3	103	0.08	0.17	−.19	−.17	−.08	−.17	.05	.18	.13		
9. ROA year 1	119	0.04	0.06	.04	.14	−.02	.04	.19	.30*	−.01	−.01	
10. ROA year 2	106	0.02	0.11	.04	.08	−.11	−.08	.09	.20*	−.20*	.25*	.69*

Note: *$p < .05$; coefficient alphas presented in parentheses along the diagonal.

Hypothesis 1, the effects of consistency on year 1 market-to-book ratio were moderated by each of the remaining three culture traits, as reflected in the statistically significant interaction effects (see Table 4). There were no significant interactions found when looking at year 2 market-to-book. Sales growth results showed no significant interactions for year 1 to 2 sales growth. However, as can be seen in Table 4 the effects of consistency on year 2 to 3 sales growth were significantly moderated by involvement, adaptability and mission, as predicted by our hypothesis. Finally, the effects of consistency on year 1 and year 2 ROA were moderated by involvement, adaptability and mission. These results can be seen in Table 4.

To explore these results in more detail, each significant interaction was graphed in accordance with Cohen et al. (2003). First considering MtB, in support of our Hypotheses, consistency was positively related to market-to-book (year 1) when coupled with relatively high levels of involvement, adaptability, or mission. However, it was *negatively* related when combined with relatively low levels of the other three culture traits. Because the nature of this relationship was consistent across all three significant interactions observed for this DV, to reduce redundancy we include a graph of only one of these significant interactions. As an example, the consistency by mission interaction can be seen in Figure 1.

When looking at the sales growth (year 2–3) criterion, also in support of our Hypothesis, consistency was positively related to sales growth when levels of involvement, adaptability or mission were high, but when coupled with lower levels of involvement, adaptability or mission, consistency was *negatively* related to sales growth. As an example, Figure 2 shows how the consistency–sales growth relationship is moderated by involvement. This pattern was consistent across the other two significant interactions (i.e. consistency by mission, and consistency by adaptability).

Finally considering ROA, contrary to our Hypothesis, we found consistency to be more positive at relatively low levels of the other traits. Figure 3 displays the graph of the significant interaction found between consistency and adaptability in predicting year 1 ROA. As can be seen, opposite to what was anticipated, consistency was positively related to ROA when coupled with relatively low levels of adaptability and this positive

Table 4 Summary of hierarchical regression analyses examining the conditional effects of consistency

	Step 1	Step 2a	Step 2b	Step 2c
Market-to-book year 1				
Main effects				
Involvement	.320	.393*	.359	.340
Consistency	−.082	−.103	−.080	−.077
Adaptability	−.095	−.113	−.136	−.123
Mission	.076	.001	.012	.001
Interaction effects				
C X I		.196*		
C X A			.206*	
C X M				.257**
Model statistics				
Model R^2	.065	.100*	.102*	.125*
Adjusted R^2	.030	.057	.060	.083
ΔR^2	.065	.035*	.038*	.060**
Sales growth year 2 to 3				
Main effects				
Involvement	−.187	−.141	−.179	−.205
Consistency	−.040	−.072	−.025	−.022
Adaptability	.205	.150	.099	.169
Mission	−.155	−.244	−.190	−.235
Interaction effects				
C X I		.374***		
C X A			.274*	
C X M				.316**
Model statistics				
Model R^2	.052	.176**	.113*	.139*
Adjusted R^2	.013	.133	.067	.094
ΔR^2	.052	.124***	.061*	.087**
Return-on-assets year 1				
Main Effects				
Involvement	−.057	−.128	−.084	−.052
Consistency	.318*	.336*	.303	.301
Adaptability	−.177	−.161	−.134	−.158
Mission	−.017	.064	.052	.043
Interaction effects				
C X I		−.235*		
C X A			−.263**	
C X M				−.262**
Model statistics				
Model R^2	.046	.098**	.110*	.111*
Adjusted R^2	.013	.058	.071	.071
ΔR^2	.046	.051**	.064**	.064**

(Continued)

Table 4 (Continued)

	Step 1	Step 2a	Step 2b	Step 2c
Return-on-assets year 2				
Main effects				
Involvement	.211	.166	.207	.219
Consistency	.262	.270	.244	.246
Adaptability	−.250	−.223	−.208	−.230
Mission	−.247	−.178	−.199	−.195
Interaction effects				
C X I		−.222*		
C X A			−.200*	
C X M				−.198*
Model statistics				
Model R^2	.075	.120*	.111*	.111*
Adjusted R^2	.039	.076	.066	.066
ΔR^2	.075	.045*	.035*	.035*

Note: *$p < .05$, **$p < .01$, ***$p < .001$. Standardized coefficients shown. Interactions predicting Market-to-book year 2 and Sales Growth year 1 to 2 were not significant.

relationship was much weaker at higher levels of adaptability. Again, the nature of this relationship was consistent across all three significant interactions observed for this DV.

These results together support the notion that the effects of cultural consistency are conditional, with the accompanying levels of the remaining culture traits determining the magnitude and direction of consistency's effects. The nature of these interactive effects supports our hypothesis for both sales growth and market-to-book, but surprisingly, these relationships were opposite what we anticipated for ROA.
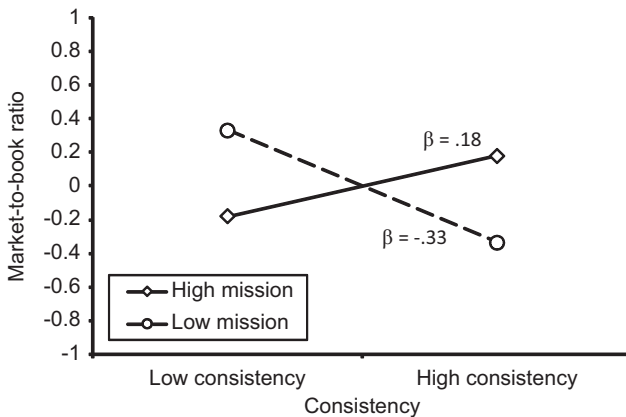
Figure 1 The moderating effect of mission on the relationship between consistency and market-to-book ratio.
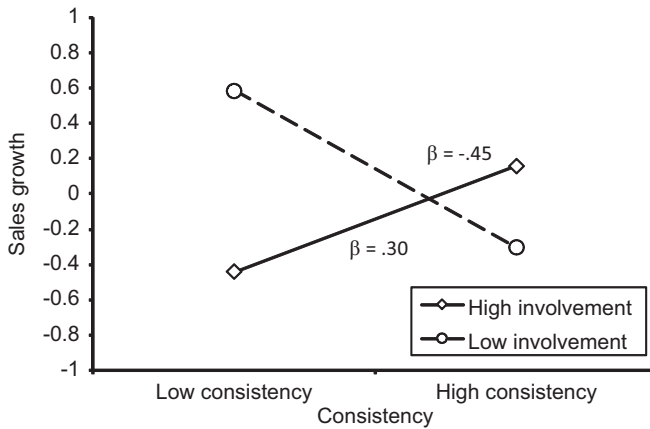
Figure 2 The moderating effect of involvement on the relationship between consistency and sales growth (year 2–3).
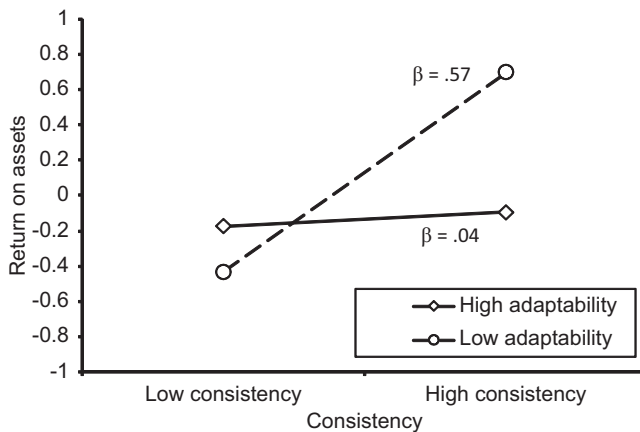
Figure 3 The moderating effect of adaptability on the relationship between consistency and return on assets (year 1).

Discussion

This study examined whether the relationships between cultural consistency and market-to-book ratio, sales growth, and return on assets depended on the level of three other traits – involvement, adaptability, and mission (Denison, 1990). This notion was tested using data from 137 public companies for which organizational culture and financial performance data were available. The findings showed support for the proposition that the effects of consistency are contingent on the levels of the other three culture traits. As expected, for two of our criteria there was good support for the interaction effects that we hypothesized. For both

MtB and sales growth, consistency was negatively related to performance at low levels of the other traits and was positively related to performance at higher levels of the other traits.

The practical implications of these findings are quite clear. Consistency is a potent force, but only when it is built around best practice, rather than 'worst practice.' It is important to acknowledge that these interactions are necessarily symmetrical, that is, they also suggest that high levels of the other traits are not very effective when combined with low levels of consistency. But since it is hard to imagine building 'all purpose' consistency and then looking around for an appropriate target, it seems to make best sense to start with positive practices and then build integration and commitment around them. These findings also clarify the dilemma faced by firms that have a highly consistent culture, which is built around highly ineffective practices. In order to improve, it appears that they must undertake a 'de-culturation campaign', designed to tear down and rebuild around more effective practices. Lending further support to this rationale, Yilmaz and Ergun (2008) found that there were no benefits of 'excess' consistency. In their study, when involvement exceeded consistency, respondents reported that they were better at developing new products. Similarly, adaptability in excess of consistency was associated with growth in sales and market share growth, as well as overall performance.

These results also present an interesting difference in the time lag between MtB and sales growth. Although the pattern of results was generally the same across the two criteria, the interactions predicting MtB were significant at year 1, but not until year 2–3 for sales growth. This could be explained by the fact that MtB is by definition future-oriented, incorporating the value of existing opportunities and future opportunities not yet realized. In contrast, sales growth is a relatively immediate and objective criterion and is generally a reflection of the product markets' response to the firm's offerings. It could well be that these different lag times in fact reflect a similar reality concerning organizational effectiveness, but that MtB forecasts that reality before it is fully manifested in sales growth. These results may suggest that the financial markets react a bit more quickly to the firm's offerings than the product markets do. Although this conjecture is supported by the findings, it would of course require additional support to understand if these findings are actually robust.

Perhaps the most interesting finding of this study was that the results for the third outcome measure, ROA, directly contradicted our hypothesis. High consistency, coupled with moderately low scores on the other traits, was associated with high profitability. This different pattern of relationships is likely due to the fact that these performance metrics capture very different things about an organization. ROA is a measure of profitability and there is a notable tradeoff organizations face between profitability and growth. This result suggests that an organization's ability to focus internally on stability, capitalize on consistency, and perhaps even ignore flexibility and change in the marketplace might be critically important to increasing profitability. Longer term, this strategy would be likely to lead to loss of both market value and market share, but it might work for the short term. This logic is also in-line with Kotter and Heskett (1992), who suggest that cultural consistency is beneficial as long as the environment is relatively stable; thus this state may not be effective long-term as the environment is likely to change over time.

This is one of a few culture studies that gives a realistic picture of the trade-offs inherent in profitability, growth, and market value, and the trade-offs in long-term and short-term performance strategies. The increased importance of future-oriented and market-based performance criteria such as MtB and sales growth in this study also fits well with the trend in the financial literature (Carton and Hofer, 2008). This study also contributes to the literature in that it presents the strongest evidence we have seen of the differential associations between organizational culture and different performance characteristics.

It is also notable that performance (in terms of sales growth and MtB) is relatively high at lower levels of both consistency and the other trait, suggesting that organizations may be better off having weaknesses in both areas than they are having strengths in consistency with weaknesses in the other areas. This counterintuitive finding also deserves further examination, to clarify how to interpret this part of the interaction. But with the majority of research focusing on direct effects between culture and performance, these results support the utility of adopting a contingency-based approach.

It is also important to consider some of the differences between these findings and earlier research suggesting that high levels of all traits are beneficial to performance (e.g. Denison and Mishra, 1995). With this reasonably large sample of firms, and no clear linear trend in the 1995–2005 time frame used in this study, it is hard to discount these findings. Instead it perhaps makes better sense to take these findings as the starting point for future research. Specifically, these findings lend support to the argument that the interplay between various aspects of an organization's culture is important, but there is still much to learn about how various culture traits combine to predict organizational outcomes. Future research would benefit from utilizing a similar approach to examine how different combinations of various aspects of an organization's culture combine to predict these and additional criteria (e.g. safety, customer satisfaction, turnover).

Several key limitations to this study must also be considered in order to place these findings in context. First and foremost, the research design used in this study, despite having data from 88,879 respondents in over one hundred organizations, still has several limitations when analyzed at the firm level. With only a one-time survey observation for each firm, paired with 1 and 2 year time lags on the performance variables, this design allows for only part of the inference over time offered by a true panel or time series design. Thus, however tempting it may be to make this leap of inference, this design does not allow for an analysis of changes in culture over time. Thus, the analyses only address how culture at a single point in time relates to organizational performance over a few years. This in itself is an important contribution, but it is also clear that future research on culture and performance would benefit from a true panel or times series design.

It may also be noted that the four culture traits are highly correlated and that the interactions between consistency and the other culture traits are similar within each of the criteria. However, CFA results from this and other studies have supported a four trait model and the strength of the interactions found further support an interpretation that these traits are assessing different aspects of an organization's culture. In addition, our sample consists of organizations that self-selected into participating in an organizational culture assessment and future research may benefit from including organizations that are less proactive in this regard as whether there are differences between these two 'types' of

organizations remains an interesting research question. Finally, as discussed earlier, this article focused on one approach to the measurement of consistency. Other measures of consistency and culture strength may also reveal interesting relationships when applied in parallel, or in combination with, the measurement approach taken here.

Conclusions

In sum, we found that the effects of consistency on performance varies in magnitude and direction as a function of other key culture traits, highlighting the need to consider the combination of culture traits when considering culture change. These interactions were supported across three different objective criteria but the nature of these relationships also varied by criteria and lag time. Thus, future research using a separate sample, other similar dependent variables, or other measures of organizational culture that reflect similar constructs would be welcome for corroborating or disconfirming results.

Finally, this study extends previous research on the link between organizational culture and effectiveness in an important way. While previous research has focused either on how certain cultural 'types' relate to performance, or on main effects between various dimensions of organizational culture and performance, we present an empirical demonstration of the importance of the interaction among cultural dimensions on performance. We also offer some direction regarding culture change efforts: when interested in growth or market-based measures, if you are low in multiple cultural traits, having strengths in the area of consistency can be detrimental to performance. Rather, it is necessary to have strong mission, adaptability, and involvement traits in order for consistency to positively relate to these types of metrics. But when an organization is focused on profitability, paying attention to consistency could be very beneficial.

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