

Running head: PROFILES OF ORGANIZATIONAL CULTURE

Profiles of Organizational Culture: The Variable Effects of Consistency

Aaron M. Schmidt
The University of Akron

Michael A. Gillespie
Denison Consulting

Lindsey M. Kotrba
Denison Consulting

Samantha A. Ritchie
The University of Akron

Daniel R. Denison
International Institute for Management Development

Portions of this research were funded through a Small Grant from the Society for Industrial and Organizational Psychology.

Address comments to:
Aaron M. Schmidt
Department of Psychology
The University of Akron
Akron, OH 44325-4301
(330)972-6705
aSchmidt@uakron.edu

Abstract

We report the findings of an empirical study of the relationship between organizational culture and publicly-available financial outcomes. While existing research suggests that culture is closely-linked to the bottom-line, the interplay among different aspects of culture has received little empirical consideration. We argue for the need to consider the combined effects of four key culture traits. In particular, we proposed that the effects of consistency on market-to-book ratio would vary in magnitude and direction as a function of other key culture traits. Using a sample of 137 publicly-traded firms, the results support this hypothesis, highlighting the need to consider profiles of culture traits when considering culture change.

Profiles of Organizational Culture: The Variable Effects of Consistency

Organizational culture has long been regarded as a critical determinant of an organization's effectiveness (Deal & Kennedy, 1982; Peters & Waterman, 1982; Schein, 1992; Wilkins & Ouchi, 1983). Yet, while plenty of conceptual arguments and anecdotal evidence exists regarding the performance consequences of culture, relatively little empirical evidence has been provided to support this fundamental assertion. Some exceptions have emerged, including influential work by Kotter and Heskett (1992), who found a correlation between indices of “strong” culture (e.g., clearly identifiable, consistent values) and long-term organizational performance. Sorenson (2002) also found that, overall, firms with strong organizational cultures demonstrated more reliable performance. Moreover, research by Denison and colleagues (Denison, 1984, 1990; Denison & Mishra, 1995; Fey & Denison, 2003; Gillespie et al., 2008; Smerek & Denison, under review; see also Gordon & DiTomaso, 1992) has afforded great insight and has demonstrated empirical ties between culture and organizational performance in various contexts, using an array of performance criteria. Nonetheless, continued empirical investigation is greatly needed which continues to extend the breadth of this work.

The model of organizational culture put forth by Denison and colleagues (e.g., Denison, 1990; Denison & Mishra, 1995; Fey & Denison, 2003) is especially useful for empirical organizational culture research in that it enables quantitative comparisons across companies. The Denison model of organizational culture conceptualizes culture along four dimensions: Involvement, Consistency, Mission, and Adaptability and provides a useful and valid framework (e.g., Denison, Janovics, Young, & Cho, under review) for investigating the relationship between organizational culture and performance. The focus on these four attributes is consistent with

other research on organizational culture and effectiveness (Kotter & Heskett, 1992; Gordon & DiTomaso, 1992; Sorenson, 2002).

While all four traits comprising Denison's model have been found to have meaningful relationships with organizational performance (e.g., Denison & Mishra, 1995), the interplay among these four culture traits has yet to be fully specified or examined. Thus, it is unclear if these four dimensions of culture exhibit independent relationships with effectiveness. Moreover, there are reasons to suspect that the culture traits may combine in more complex ways. In particular, the current study examines the proposition that the effects of consistency on important organizational outcomes may be highly variable, such that the nature and magnitude of its effects may depend upon the coinciding levels of other culture traits. Better understanding the joint impact of culture traits on organizational outcomes can yield both increased theoretical understanding and great practical value. We begin by providing a brief review of the literature regarding these traits, including the extant empirical research linking culture to organizational effectiveness. We then discuss the manner in which profiles of culture traits may exhibit unique relationships with effectiveness, beyond those identified by examining each trait in isolation.

Organizational Culture

The four dimensions of culture comprising the Denison model—Involvement, Consistency, Mission, and Adaptability—are consistent with Schein's (1992) notion of culture, which is defined as the "shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration" (p. 12). Denison's (1990) definition incorporates and builds on these assumptions, providing greater emphasis on measureable behavior: "...[T]he underlying values, beliefs, and principles that serve as a 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). Accordingly, we measure these cultural attributes using the Denison Organizational Culture Survey (DOCS), which asks organizational members about their perceptions of behaviors that are easily observed yet tap more deeply-held cultural aspects of the organization (see Denison, 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; Lawler, 1996; Deal & Kennedy, 1982; Likert, 1961; Peters & Waterman, 1982).

Consistency refers to the existence of organizational systems and processes that promote alignment and efficiency over time. It is similar to the concept of a “strong” culture in that employees’ perceptions are in agreement and they share a similar set of values. Organizations are more effective when they are consistent and well-integrated (Calori & Sarnin, 1991; Kotter & Heskett, 1992; Saffold, 1988).

Adaptability is the organization’s capacity for internal change in response to external conditions (Denison & Mishra, 1995). Highly internally-focused and integrated organizations can have difficulty adapting to external market demands (Lawrence & 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 (Fey & Denison, 2003; Nadler, 1998).

Finally, the *Mission* trait reflects the degree to which an organization is clear on why it exists and where it is headed. Effective organizations pursue a mission that provides meaning and direction for their employees (Denison & Mishra, 1995). These organizations have a clear

purpose and direction, goals and objectives, and a vision for the future (Fey & Denison, 2003; Mintzberg, 1987, 1994).

These four traits are operationalized by three factors or indexes, as shown in Table 1. The indexes and traits are arranged in a circumplex for interpretive purposes. Figure 1 conveys that 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

Existing research shows that the cultural traits of Involvement, Consistency, Adaptability, and Mission indeed relate to important indicators of organizational performance. More specifically, these attributes have shown 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, Haaland & Goelzer, 2003; Denison et al., under review), as well as on objective indicators such as Return-on-Assets (ROA), Sales Growth, and Market-to-Book ratios (MTB) (e.g., Denison & Mishra, 1995; Smerek & Denison, under review). While both subjective and objective performance metrics are important, the current study focuses on the objective indicator of *market-to-book ratio*, as it is a highly meaningful variable that captures how much a company is worth at present time (e.g., market value) compared to its book value.

Toward an Understanding of Culture Profiles

As noted above, empirical research has demonstrated positive relationships between each of the four culture dimensions and various indices of organizational effectiveness. However,

further advances in research and practice regarding organizational culture can be facilitated by developing a greater understanding of how culture traits combine to influence organizational effectiveness. Unfortunately, existing models that provide a rich theoretical basis for emphasizing particular traits or profiles of traits are not utilized in conjunction with survey methods that permit statistically-defensible tests of these hypotheses (e.g., Cameron & Freeman, 1991; Cameron & Quinn, 1999). Therefore, we explore two models regarding the manner in which these four dimensions jointly influence various effectiveness criteria: an additive/compensatory model and a multiplicative/interactive model.

The additive/compensatory model. Perhaps the most straightforward manner in which culture traits may jointly influence organizational effectiveness is the additive model. This model suggests that each dimension has unique/incremental effects. The basic implication is that “more is better” for each and every dimension. The optimal profile would simply be the maximum possible levels of each dimension. This model is also compensatory in nature, as deficiencies on one dimension may be compensated for by strengths in other dimensions. This model is consistent with existing theoretical and empirical work on culture (e.g., Denison & Mishra, 1995), which proposes that each dimension has a unique and positive relationship with organizational effectiveness. As noted in discussions of alternative models, there are reasons to believe that the additive model may be an overly simplified model.

Hypothesis 1: The four organizational culture traits will relate significantly to market-to-book ratio.

The interactive model. The 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 effects of consistency on organizational effectiveness are perhaps most likely to vary as a function of other organizational traits. That is, rather than exhibiting solely

linear relationships with effectiveness, consistency may moderate the effects of involvement, adaptability, and mission. For example, a high degree of consistency combined with a strong and positive mission may be a key to success; whereas a high degree of consistency combined with a weak or ill formed mission may be a recipe for disaster. An interactive model allows for *both* the levels of each construct (main effects) *and* where they fall relative to one another (interactive effects) to predict effectiveness.

Variable effects of Consistency are expected because Consistency represents the organizations' capacity to efficiently do what it does over and over. For companies with effective cultures on the other traits, this should be a good thing – Consistency should further enhance the positive relationship expected by the other traits. However, for companies that are deficient on one or all of the other traits, Consistency may actually be a *detriment* to performance. We expect this to be the most pronounced for the Mission trait, as companies that do not have a clear direction, yet consistently churn-out their product or service, will likely struggle to survive in the long run. Similarly, we expect a similar pattern for the trait of Adaptability, which includes an emphasis on customer focus. Other than the general reasoning of high Consistency paired with low traits being a maladaptive pattern, we do not currently have any theoretical or anecdotal reasoning to truly expect this pattern for the Consistency X Involvement interaction. In addition, the very notion of organizational culture includes an organization's struggle to adapt externally and integrate internally (Denison, 1990; Schein, 1992). As Consistency and Involvement are both internally-focused traits (see Figure 1), it is not expected that they should interact the way we expect Consistency to interact with the external traits (i.e., Adaptability and Mission). Therefore, the Consistency X Involvement interaction will simply be investigated in an exploratory fashion.

Hypothesis 2: Consistency will interact with Mission and Adaptability such that Consistency will be less positively (or perhaps even negatively) related to market-to-book ratio when Mission or Adaptability are low than when Mission or Adaptability are high.

Exploratory Analysis: We will explore the relationship between the Consistency × Involvement interaction and market-to-book ratio.

Method

Sample

The sample for this research consisted of 137 organizations (from 17 different industries) surveyed by Denison Consulting from 1995 to 2006. These organizations were selected because respondents completed the Denison Organizational Culture Survey (DOCS) and they are also publicly-traded companies, permitting analysis of their financial data. The smallest sample size is 25, the largest is 12,018, and the mean is 660 (SD = 1448).

Measures

Organizational Culture. The 60-item Denison Organizational Culture Survey (Denison & Neale, 2000) measures four traits (Involvement, Consistency, Adaptability, and Mission), each of which contain 3 indexes, for a total of 12 indexes. Each index is comprised of 5 items, so each trait contains 15 items. The DOCS utilizes a 5-point scale, ranging from 1=Strongly Disagree to 5=Strongly Agree. An effort is made to ensure that responses regarding the organization as a whole are in fact representative of the organization as a whole. Each company's DOCS scores are the mean of the responses provided by all respondents within the company. Justification for aggregating individual responses to this measure is provided elsewhere (Denison et al., under review; Gillespie et al., 2008; Smerek & Denison, under review).

Organizational Effectiveness. Our sample is comprised of publicly-traded companies, facilitating access to financial records through Standard & Poor's COMPUSTAT database. This

research will examine market-to-book ratio, which is the ratio of market price of a company's shares over its book value of equity. As described by Smerik and Denison (under review), market-to-book ratio is calculated by taking stock price (fiscal year close) / (equity / common shares outstanding).

Results

Descriptive statistics for study variables are provided in Table 2. The hypotheses regarding the conditional effects of consistency were 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 step. The four culture traits were grand mean centered prior to inclusion in the regressions (Cohen, Cohen, West, & Aiken, 2003). The results of these analyses are summarized in Table 3.

As reported in Table 2, significant bivariate relationships were observed between market-to-book ratio and both Mission ($r = .19, p < .05$) and Involvement ($r = .24, p < .05$). Conversely, Consistency ($r = .16, ns$) and Adaptability ($r = .15, ns$) were not significantly related to market-to-book ratio. When entered simultaneously in the regression analyses, none of the culture traits exhibited a significant unique effect on market-to-book ratio, as shown in Table 3. Nonetheless, taken together, these results provide partial support for Hypothesis 1.

Providing support for Hypothesis 2, the effects of Consistency on market-to-book ratio were moderated by each of the remaining three culture traits, as reflected in the statistically significant interaction effects (see Table 3). As shown in Figures 2, 3, and 4, Consistency was positively related to market-to-book ratio when coupled with high levels of Involvement, Adaptability, and/or Mission. However, it was *negatively* related when combined with low levels of the other culture traits. 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.

Discussion

The current study examined whether the organizational culture trait of consistency demonstrated differential relationships with market-to-book ratio depending on the level of three other traits, involvement, mission, and adaptability (Denison, 1990). We tested this notion using a rare dataset containing over 130 public companies for which organizational culture and market-to-book ratio data were available. We first correlated each trait with market-to-book ratio and also entered them simultaneously in a regression equation predicting market-to-book ratio. The bivariate correlations provided mixed support for our hypothesis that each trait would relate positively to market-to-book ratio. Though Mission and Involvement were both significantly related to market-to-book ratio, Consistency and Adaptability were not.

More interesting was support for the proposition that the effects of the consistency culture trait are contingent on the levels of the remaining culture traits. Alternatively, one could interpret these interactions as indicating that the implications of involvement, adaptability, and mission depend on the level of consistency exhibited by the organization. This is a particularly interesting finding in light of the strong correlations among traits (ranging from .65 to .79, all significant at $p < .05$). While the main effects may exhibit strong overlap, the interplay of the four traits may indeed be quite meaningful.

Given the repeated pattern of findings regarding consistency, it is clear that organizations should only work to improve this cultural attribute after ensuring that they are effectively cultivating the traits of Mission, Adaptability, and Involvement. In sum, we found that the effects of consistency on market-to-book ratio varies in magnitude and direction as a function of other

key culture traits, highlighting the need to consider profiles of culture traits when considering culture change.

However, it should be noted that we focused only on one criterion (i.e., market-to-book ratio) in assessing the culture-performance link. This measure is uniquely relevant in that it accounts for the somewhat subjective or intangible effects of "market value", and hence incorporates' experts judgments regarding the current and future worth of the companies in this sample. However, future research using a separate sample, other similar DVs, or other measures of organizational climate or culture that reflect similar constructs would be welcome for their corroborating or disconfirming results.

Conclusion

This study extends previous research on the organizational culture to performance link 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. Specifically, we offer some caution regarding culture change efforts: do not try to improve consistency first. Rather, it is necessary to have strong mission, adaptability, and involvement traits in order for consistency to have a positive impact on market-to-book ratio.

References

- Becker, G. (1964). *Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education*. Columbia University Press, New York.
- Calori, R., & Sarnin, P. (1991). Corporate culture and economic performance: A French study. *Organization Studies*, 12, 49-74.
- Cameron, K. S., & Freeman, S. J. (1991). Cultural congruence, strength, and type: Relationships to effectiveness. *Research in Organizational Change and Development*, 5, 23-58.
- Cameron, K. S., & Quinn, R. E. (1999). *Diagnosing and changing organizational culture: Based on the competing values framework*. Addison-Wesley.
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences*. Mahwah, NJ: Earlbaum.
- Deal, T. E., & Kennedy, A. A. (1982). *Corporate Cultures*. Reading, MA. Addison-Wesley.
- Denison, D. (1984). Bringing corporate culture to the bottom line. *Organizational Dynamics* 13, 4-22.
- Denison, D. (1990). *Corporate culture and organizational effectiveness*. New York: John Wiley & Sons.
- Denison, D. R. (1996). What IS the difference between organizational culture and organizational climate? A native's point of view on a decade of paradigm wars. *Academy of Management Review*, 21, 619-654.
- Denison, D. R., Haaland, S. and Goelzer, P. (2003). Corporate culture and organizational effectiveness: Is Asia Different From the Rest of the World? *Organizational Dynamics*, 33(1), 98-109.
- Denison, D. R., Janovics, J., Young, J., & Cho, H. J. (under review). Diagnosing organizational cultures: Validating a model and method.
- Denison, D., & Mishra, A. (1995). Toward a theory of organizational culture and effectiveness. *Organizational Science*, 6, 204-223.
- Denison, D., & Neale, W. (2000). *Denison Organizational Culture Survey*. Ann Arbor, MI: Denison Consulting.
- Fey, C.F., & Denison, D.R. (2003). Organizational Culture and Effectiveness: Can American Theory be Applied in Russia? *Organizational Science*, 14, 686-706.
- Gillespie, M. A., Denison, D. R., Haaland, S., Smerek, R. & Neale, W. S. (2008). Linking organizational culture and customer satisfaction: Business-unit results from two

- companies in different industries. *European Journal of Work and Organizational Psychology*, 17(1), 112-132.
- Gordon, G., & DiTomaso, N. (1992). Predicting corporate performance from organizational culture. *Journal of Management Studies*, 29, 783-798.
- Kotter, J., & Heskett, J. (1992). *Corporate culture and performance*. New York: Free Press.
- Lawler, E. E., III (1996). *From the Ground Up: Six Principles for Building the New Logic Corporation*. Jossey-Bass, San Francisco, CA.
- Lawrence, P., & Lorsch, J. (1967). Differentiation and Integration in Complex Organizations. *Administrative Science Quarterly*, 12, (1967), 1-30.
- Likert, R. (1961). *New Patterns of management*. McGraw-Hill, New York.
- Mintzberg, H. (1987). Crafting strategy. *Harvard Business Review*, 65, 66-75.
- Mintzberg, H. (1994). *The Rise and Fall of Strategic Planning: Reconciling for Planning, Plans, Planners*. Free Press, New York.
- Nadler, D. (1998). *Champions of Change: How CEOs and Their Companies Are Mastering the Skills of Radical Change*. Jossey-Bass, San Francisco, CA.
- Peters, T. J., & Waterman, R. H. (1982). *In search of excellence: Lessons from America's best-run companies*. New York: Harper & Row.
- Saffold, G. (1988). Culture traits, strength, and organizational performance: Moving beyond "strong" culture. *Academy of Management Review*, 13, 546-558.
- Schein, E. H. (1992). *Organizational Culture and Leadership* (2nd ed.). San Francisco: Jossey-Bass.
- Sorensen, J. (2002). The strength of corporate cultures and the reliability of firm performance. *Administrative Science Quarterly*, 47 (March), 70.
- Smerek, R. E., & Denison, D. R. (under review). Social Capital in Organizations: Exploring the Link to Firm Performance.
- Wilkins, A. L., & Ouchi, W. G. (1983). Efficient Cultures: Exploring the Relationship Between Culture and Organizational Performance. *Administrative Science Quarterly*, 28, 468-481.

Table 1. Denison Model Traits, Indexes, and Definitions

<u>Trait</u>	<u>Index</u>	<u>Definition</u>
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 existence of organizational systems and processes that promote alignment and efficiency.
	Coordination/Integration	Different functions and units of the organization are able to work together well to achieve common goals. Organizational boundaries do not interfere with getting work done.
	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		The organization knows why it exists and where it is headed.
	Strategic Direction	There is a clear strategy that gives meaning, purpose, and direction.
	Goals and Objectives	Leadership has "gone on record" to create agreement 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.

Table 2. Descriptive Statistics and Intercorrelations among Study Variables

	1	2	3	4	5
1. Consistency	(.93)				
2. Involvement	.78*	(.95)			
3. Adaptability	.65*	.73*	(.88)		
4. Mission	.77*	.79*	.73*	(.96)	
5. Market-to-Book	.16	.24*	.15	.19*	1
<i>n</i>	137	137	137	137	111
<i>Mean</i>	3.27	3.41	3.23	3.31	3.62
<i>SD</i>	.18	.20	.17	.23	3.42

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

Table 3. Summary of Hierarchical Regression Analyses Examining the Conditional Effects of Consistency

	β	Num <i>df</i>	Den <i>df</i>	<i>F</i>	<i>p</i>	R^2
<i>Step 1: Main Effects</i>						
Consistency	-1.45	1	106	.26	.61	.00
Involvement	5.06	1	106	3.01	.09	.03
Adaptability	-1.86	1	106	.36	.55	.00
Mission	1.07	1	106	.18	.67	.00
<i>Step 2: Interaction Effects</i>						
Consistency \times Involvement	13.99	1	105	4.07	<.05	.04
Consistency \times Adaptability	17.48	1	105	4.39	<.05	.04
Consistency \times Mission	15.25	1	105	7.20	<.01	.06

Note. DV = market-to-book ratio

Table 3. Itemized budget

<i>Item</i>	<i>Cost</i>
Poster and handouts for SIOP conference presentation	\$135.62
Payment to Research Assistant (87.5 hours at \$16/hour)	\$1,400.00
<i>TOTAL</i>	\$1,535.62

Figure 1. Denison Model



Figure 2. The Moderating Effect of Involvement on the Relationship between Consistency and Market-to-Book Ratio

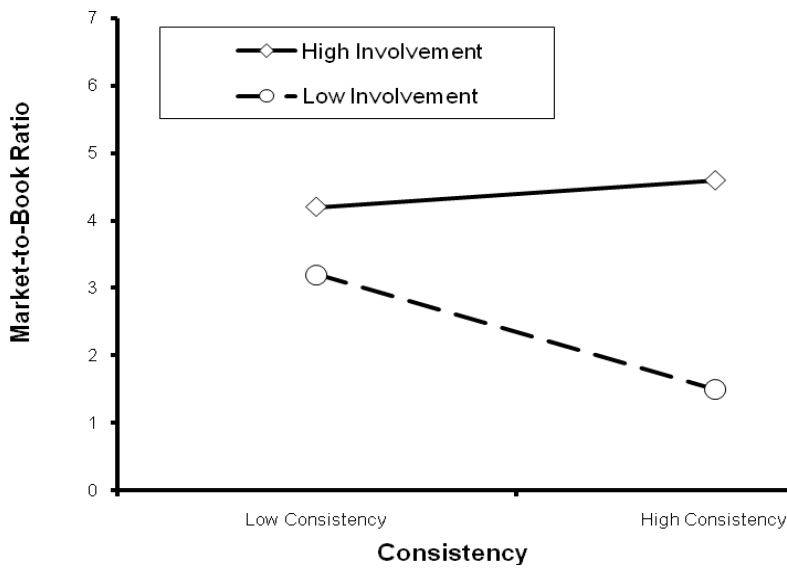


Figure 3. The Moderating Effect of Adaptability on the Relationship between Consistency and Market-to-Book Ratio

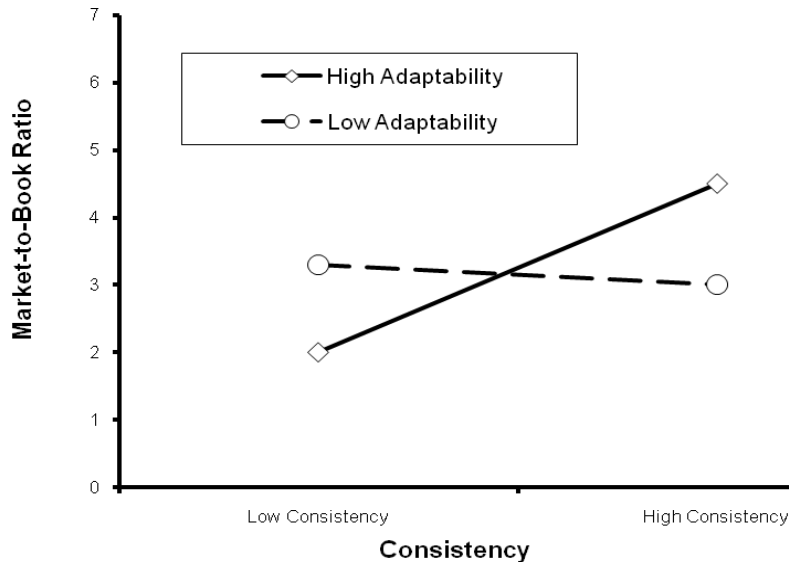


Figure 4. The Moderating Effect of Mission on the Relationship between Consistency and Market-to-Book Ratio

