The Journal of Business Inquiry 2012, 11, 1, 13–32
http:www.uvu.edu/woodbury/jbi/volume11
ISSN 2155-4072

The Three Faces of the Cube One Framework

By ELIZABETH A. LETZLER, RICHARD E. KOPELMAN, and DAVID J. PROTTAS[*]

Applying a multidisciplinary perspective, the Cube One framework posits that organizational performance is driven by three distinct sets of practices: enterprise-, customer, and employee-directed. Examining data from a sample of 860 organizations, it was found that levels of enacted practices were systematically related to organizational performance. As hypothesized, each high face of the Cube One framework was significantly related to a conceptually relevant criterion, and the high enterprise-directed face showed a large effect size. Limitations and possible practical applications are discussed. With refinements, the Cube One framework may be useful for diagnosing relative weaknesses and intervening to improve organizational performance.

Keywords: Enterprise-directed Practices, Customer-directed Practices, Employee-directed Practices

JEL Classifications: M19, M39, M59

"Organizations do not simply work; they *are made* to work."
(Tsoukas and Chia, 2002, p. 577; emphasis in original)

I. Introduction

The sage and concise observation of Tsoukas and Chia notwithstanding, a vast literature has accumulated over many decades about how to make organizations work. One way to classify this literature is by what might loosely be called genre. There are largely theoretical works, often appearing in book form, which may report the analysis of secondary data (e.g., Barnard, 1938, Collins and Porras, 1994; Lawler, 1986; Pfeffer, 1998); and there are first-hand reports of managerial success as provided by a practitioner (e.g., Berry and Seltman, 2008 [Mayo Clinic]; Novak, 2012 [Yum brands]; Welch, 2005 [GE]). There are also works in book format which focus on a specific set of techniques and often report the analysis of primary data. Examples include the productivity measurement and enhancement system (ProMES) developed and reported by Pritchard, Weaver, and Ashwood (2012) and the work by Pulakos (2009) on performance management. The management literature, broadly defined, also includes works that focus on improving customer satisfaction such as the service profit chain (Heskett, Sasser and Schlesinger, 1997) and the work of Reichheld (2006) on customer loyalty and the ultimate question.

In addition, there are immense academic literatures focusing on particular functions and/or techniques which address subfields of inquiry within management, such as organizational behavior, service management, quality management, marketing management, operations management, human

[*]Kopelman: Baruch College, New York, NY 10010. (Email: richard.kopelman@baruch.cuny.edu); Letzler: Baldwin, NY 11510. (Email: lizletzler@aim.com); Prottas: Adelphi University, Garden City, NY 11530. (Email: prottas@adelphi.edu).

resource management, and so forth. There are journals dedicated to reporting research within these fields. Examples of such research would include studies of staffing practices, research on goal setting, studies about responding to service lapses, and analyses of the effects of bundles of human resource management practices (often called High Performance work systems).

In light of this disciplinary focus, many academic studies do not measure the effects of practices on organizational performance; rather they tend to examine the effects of specific practices on sub-criteria pertinent to a single functional area. For example, Locke and Latham (1990) reported on more than 200 studies pertinent to goal setting and task performance; along these lines, Franke and Park, (2006) reviewed more than 150 samples which found that adaptive selling behaviors and customer orientation were positively associated with individual sales results.

However, increasingly during the past two decades, research has looked at the effects of practices on organizational performance. For instance, Boselie, Dietz and Boon (2005) identified more than 100 studies that looked at relationships between various Human Resource Management practices and organizational performance. Also, some researchers have looked at practices across more than one functional domain as related to organizational performance, e.g., the linkage research of Wiley and Campbell, 2006; the service profit chain research of Heskett, Sasser, and Wheeler, 2008); and the multiple metrics incorporated in the balanced scorecard approach of Kaplan and Norton (1996). Indeed, Jaworski and Kohli (1993) provided impressive evidence as to the effects of market orientation and management practices on overall organizational performance.

Building on the multi-functional writing and research to date, the present research is grounded in a three-dimensional theoretical model that rests on measuring levels of practices across disciplines—namely, the Cube One framework. The basic premise of this framework is that successful organizational performance requires high levels of enactment of three specific sets of practices: productivity-directed, customer-directed, and employee-directed practices. Prior research on this framework has found support using case-related evidence combined with Internet-based data (refereed journal article, 2012) and objective evidence based on Most Admired Company attribute ratings and market capitalizations (Kopelman, 2012). According to this perspective, practices can be located in three-dimensional space, and organizations can be classified as High, Middle, or Low on the levels of enactment of each set of practices. A schematic representation of the Cube One framework is provided in Figure 1.

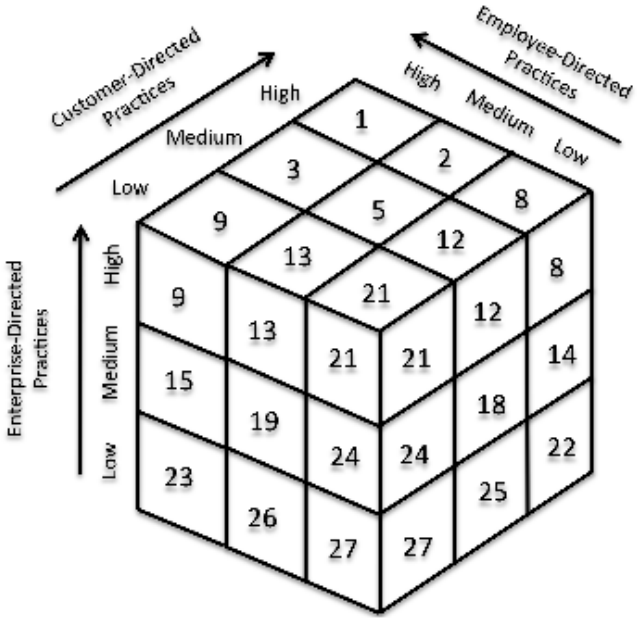
Although prior multi-functional research and writing has been conducted as noted above, Simon (1945/1997) was perhaps the first author formally to theorize that three sets of practices are necessary for successful organizational performance. In Administrative Behavior, Simon (1945/1997) described a business organization as an enterprise with three key participants—the manager (Simon used the term entrepreneur), customers, and employees. The manager focuses resources on the attainment of organizational goals; customers contribute revenue to pay for operating expenses and cost of capital; and employees contribute their time, knowledge, and talent to get the work done. However, Simon did not address how to make the organization work, nor he did he address specific management and marketing practices.

Simon's model does incorporate three key functional areas pertinent to organizational performance (i.e., management, marketing, and human resources); however, management research to date has only limitedly integrated across functional areas. Although academic research is typically delimited by academic function and sub-function, (e.g., production management, strategic management, human resource management, entrepreneurship management), each with its own journals, the present investigation adds to the limited prior research (e.g., Jaworski and

Kohli, 1993), that examines practices that span multiple functional domains. Therefore, our core research question is as follows: is there evidence to support the contention of the Cube One framework that successful organizational performance requires high levels of enactment of enterprise-, customer- and employee-directed practices?

The text is organized as follows: first, we develop the rationale and theoretical underpinnings of the Cube One framework; second, we propose five hypotheses that describe the relationships among the framework's components; third we present the results of the present data analysis, and lastly we discuss the findings, their implications, limitations, and potential applications.

Figure 1: Schematic Representation of the Cube One Framework



II. Model Development

A. The Cube One Framework

Successful organizations are need-satisfying places. According to the Cube One framework, organizational performance is driven by practices that satisfy the needs/objectives of three primary participants: the sources of capital (lenders, investors, taxpayers, dues payers, and grantors), customers, and employees. Managers, as representatives of the sources of capital, seek efficiency in operations and implement enterprise-directed practices in the quest to retain and attract capital. Employees contribute time and effort to the organization in exchange for good treatment and wages; and customers contribute money in return for products and services at an attractive price. In Simon's (1945/1997) words, "The organization objective is, indirectly, a personal objective of all the participants. It is the means whereby their organizational activity is bound together to achieve a satisfaction of their own diverse personal motives" (p. 15). Customer and employee objectives are closely and directly related to those of the organization. According to Barnard (1938) the satisfaction of employee objectives yields cooperative efforts that are

consonant with the employee's "zone of indifference" (p. 167), the degree that individuals willingly accept direction from others without questioning authority.

Differences in performance between organizations result from decisions and actions taken inside organizations (Collins 2001; Hansen and Wernerfelt 1989). By employing resources efficiently and in unique ways organizations can produce value in excess of the cost of the resources used (Pfeffer, 1998). Thus value is created through decisions made about how the organization operates—i.e., through management practices.

The three sets of practices examined in the present research were drawn from practices that have received consistent support with regard to pertinent intermediate criteria, such as efficiency, customer satisfaction, and employee satisfaction. In total, 232 academic journal articles yielded 524 practice statements. More specifically, 114 journal articles yielded 248 examples of specific enterprise-directed practices, 45 journal articles yielded 110 examples of customer direct-practices, and 73 journal articles yielded166 statements of employee-directed practices. Sample practices and sources are provided in the Appendix at the end of this article. Insofar as each specific practice has been found to improve its corresponding intermediate criterion, it was reasoned that the composite level of enactment of each set of practices would be positively related to organizational performance. In the one prior study pertinent to this assumption it was found that organizations in Cube One (i.e., High on all three sets of practices) have higher levels of performance compared to organizations classified in the other cubes (refereed journal article, 2010). The difference in ratings of organizational performance between organizations in Cube One and Cube 27 was greater than 14 standard errors—a difference far larger than the famous Six Sigma threshold (i.e., six standard errors), an outcome with a frequency of 39 occurrences in one million observations).

To date there has been no direct test of causal mechanisms that might account for finding a relationship between the cubes in the Cube One framework and organizational performance. This is because intermediate criteria have not been measured previously. Specifically, it might be posited that customer-directed practices lead to the intermediate criterion of customer satisfaction/loyalty which should be a precursor of organizational performance. Likewise, employee-directed practices should lead to the intermediate criterion of employee satisfaction/ loyalty, a precursor of organizational performance; and enterprise-directed practices should lead to high levels of the intermediate criterion organizational efficiency/effectiveness, another presumed precursor of organizational performance.

III. Hypotheses

Based on the structure of the Cube One framework, organizations scoring High with respect to the enactment of the three sets of practices (viz., enterprise-, customer- and employee-directed practices) are by definition in Cube One. Likewise, organization scoring Low with regard to the frequency of enactment of the three sets of practices are by definition in Cube 27. As noted, to date only one prior research study has examined (and found) differences in rated organizational performance between organizations classified in Cube 1 and Cube 27. In light of the basic premise of the Cube One framework and prior research it is predicted:

> Hypothesis1: Organizations in Cube One will have a higher level of rated organizational performance compared to organizations classified in Cube 27.

Consistent with Hypothesis 1, it follows that there should be a systematic relationship between levels of practices and rated organizational performance. Compared to organizations in

Cube One (which are High, High, High on the three sets of practices), the next highest level of performance should be found among organizations with two High scores and one Middle score in terms of the three sets of practices—Cubes 2, 3, and 4—which we label Metacube A. If we assign scores of 3, 2, and 1, respectively, to High, Middle, and Low levels of practices, organizations in Cube 1 would have a predicted organizational performance score of 9 (using an additive formulation) and organizations in Metacube A would have a predicted performance score of 8. Extending this approach for predicted organizational performance from scores of 7 through 4 defines Metacubes B through E and organizations with Low levels of all three sets of practices (Cube 27) would have a predicted organizational performance score of 3. According to the Cube One framework it would be posited that level of enactment of practices would be systematically related to organizational performance. Therefore, we advance the following proposition:

> Hypothesis 2: There will be a consistent, systematic relationship between levels of practices (per the seven Cubes/Metacubes) and rated organizational performance with performance highest in Cube One and lowest in Cube 27.

Schematically, the Cube One framework has six sides or faces. Of particular interest are the three faces that correspond with High scores on enterprise-directed, customer-directed, and employee-directed practices. It follows that organizations in the nine cubes that comprise the High enterprise-directed practices face should have higher scores on the intermediate criterion of efficiency/effectiveness compared to organizations in the remaining 18 cubes. Likewise, organizations in the nine cubes that comprise the High customer-directed practices face should have higher levels of customer satisfaction/loyalty than organizations in the remaining 18 cubes. Finally, organizations with High scores on the employee-directed practices face should have higher levels of employee satisfaction/loyalty compared to organizations in the remaining 18 cubes. Figures 2 through 4 present schematics of the cubes that constitute each of the three faces.

For each High face there is, of course, a Low face and an in-between or middle "slice" of organizations. Organizations in cubes constituting the High face should be positively associated with the corresponding, conceptually appropriate intermediate criterion. More formally stated, we advance the following three propositions:

> Hypothesis 3: Organizations in cubes that constitute the High enterprise-directed practices face will have higher levels of organizational efficiency/ effectiveness compared to organizations in the other 18 cubes.
>
> Hypothesis 4: Organizations in cubes that constitute the High customer-directed practices face will have higher levels of customer satisfaction/loyalty compared to organizations in the other 18 cubes.
>
> Hypothesis 5: Organizations in cubes that constitute the High employee-directed practices face will have higher levels of employee loyalty/satisfaction compare to organizations in the other 18 cubes.

Figure 2: High Enterprise-Directed Practices Face

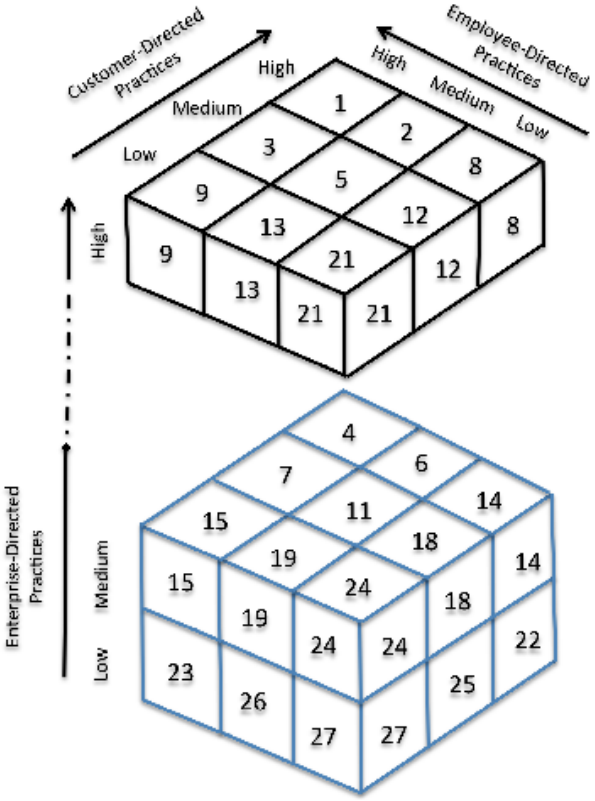


Figure 3: High Customer-Directed Practices Face

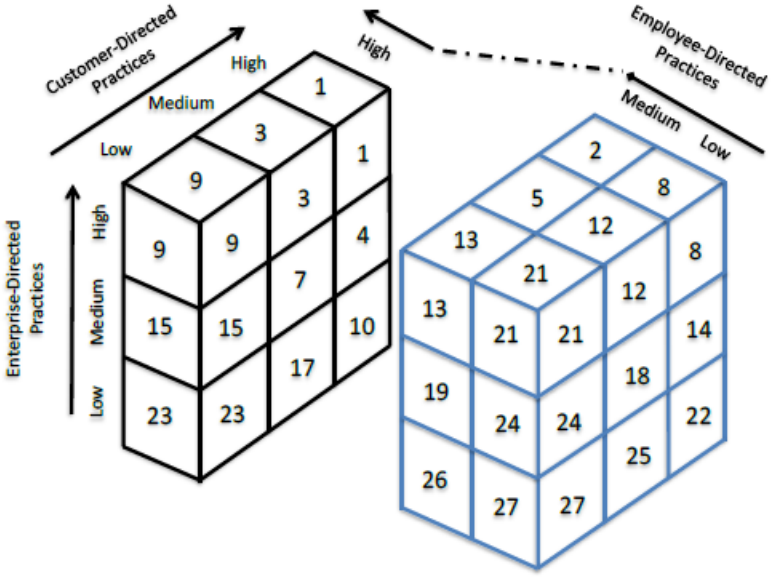
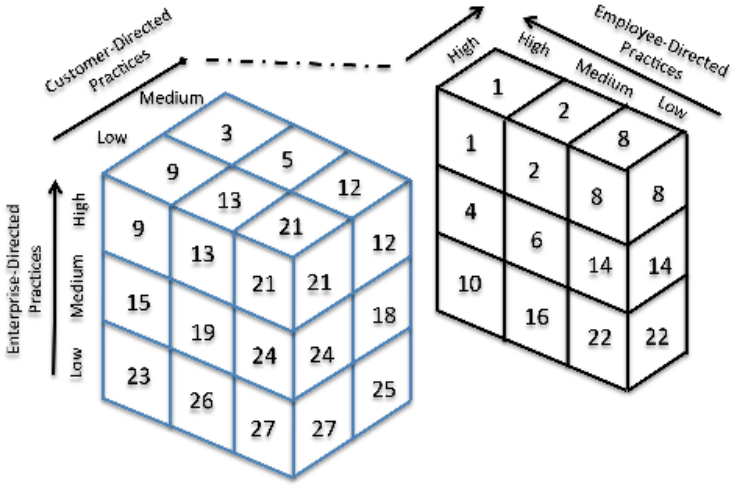


Figure 4: High Employee-Directed Practices Face



IV. Methodology

A. Participants and Procedure

Participants were attendees at management education and training seminars held in New York City by an independent management training organization. We received 1,156 questionnaires representing a 42 percent response rate. Participants included employees from organizations of all types and sizes including: publicly- and privately- held for-profit companies, as well as nonprofit, and governmental organizations. Among the industries included were finance, accounting, law, pharmaceuticals, aviation, education, and general manufacturing. The typical organization was large (median sales of $960 million) and for-profit (80 percent of sample) with a median domestic work force of 3,564 employees and 937 people at the focal worksite. Participant median age was 37 years, compensation was $83,000, tenure with the employer was four years, and tenure on the current job was two years. Fifty one percent were female; 77 percent possessed a bachelor's degree or higher; and 61 percent worked between three and five levels below the organization's Chief Executive Officer. Participation was voluntary and anonymous, with a token reward of a management-related book given to responders.

The questionnaire was quite lengthy, consisting of 164 items on 10 pages. Consequently, a large number of questionnaires were missing data on at least one item; further, the scope of the questionnaire was broad as it asked about the frequency of enactment of 137 different practices pertinent to multiple functions. Also contributing to missing data was our decision to treat both Don't Know and blank responses as missing data. To minimize the loss of cases due to missing data, we substituted the practice portfolio case mean for missing data for respondents missing three or fewer practice statements in a portfolio, out of 26 practices per portfolio. The maximum number of substituted items per case was nine, or 10 percent, and this was a rare occurrence. According to Cohen and Cohen (1983), up to 10 percent missing data is acceptable. For analyses involving the three practice portfolios, sample size decreased to 861.

B. Measures

B1. Three Sets of Practices

We operationalized the three practice portfolios from a pool of 137 practice statements: 37 customer-directed practices, 42 employee-directed practices, and 58 enterprise-directed practices. Response scale endpoints ranged from 1 (*Never or Almost Never*) to 5 *(Always or Almost Always*), (plus *Not Applicable* and *Don't Know*). We developed the practice statements from 1748 articles published between 1990 and 1999 in the *Academy of Management Journal*, *Journal of Applied Psychology*, *Journal of Marketing*, *Journal of Management*, *Personnel Psychology*, *Journal of Marketing Research*, and *Strategic Management Journal*. We examined the entire contents of the even-numbered year volumes for the first three journals; and the entire contents of the odd-numbered year volumes for the latter four journals. Two authors sorted the 1637 statements into three distinct sets of practices (enterprise-, customer- and employee-directed practices) with inter-rater agreement of 81.3 percent on a test of 150 randomly selected statements). Sample items are: "Employee concerns are responded to with action, not just words," "Promises made to customers are met and/or exceeded," "Work processes are regularly analyzed to identify opportunities to improved operating performance." For this analysis we retained 26 items for each set of practices (not using items with higher percentages of missing data or which lowered internal consistency reliability). The maximum score on each set of practices was 130. Mean and median scores and internal consistency reliabilities (Cronbach alpha) for the three sets of practices were: employee-directed practices, m = 89.98, sd = 16.96, md = 90.48, α = .94; customer-directed practices, m = 97.53, sd = 14.97, md = 98.00, α = .92; enterprise-directed practices, m = 84.21, sd = 16.79, md = 84.00, α = .94.

B.2. Outcome Measures

The three intermediate criteria of enterprise efficiency/effectiveness, customer satisfaction/ loyalty, and employee satisfaction/loyalty were each measured by 3-item scales (with varying anchors shown below in parentheses). Given that the three items were assessed on 5-point scales, the maximum score for each intermediate criterion measure was 15.

The efficiency/effectiveness items (and response anchors) were: "Compared to other organizations, how efficient is the organization in utilizing its resources to produce products/services at low cost?" (*One of the Worst* to *One of the Best*); "Compared to other organizations, how effective is the organization in producing high quality, reliable products/ services in a timely manner?" (*One of the Worst* to *One of the Best*); "Compared to other organizations, how adaptive is the organization to changes in its environment?" (*One of the Worst* to *One of the Best*) Basic statistics for the 3-item efficiency/effectiveness scale were: m = 10.43, md = 11.00, sd = 2.33, α = .76.

Customer satisfaction/loyalty was assessed by the following three statements: "How satisfied do you believe customers are with the organization?" (*Very Dissatisfied* to *Very Satisfied*) "In your judgment how likely are customers who have purchased once to purchase again?" (*Very Unlikely* to *Very Likely)* "How likely are customers to recommend the organization (or its products/services) to others?" (*Very Unlikely* to *Very Likely)* Basic statistics for the 3-item customer satisfaction/loyalty scale were: m = 12.41, md = 13.00, sd = 2.20, α = .71.

The employee satisfaction/loyalty statements (and response anchors) were: "Considering everything how satisfied are you with your job?" (*Very Dissatisfied* to *Very Satisfied*) ("How would you rate the organization as a place to work compared to other organizations?" (*One of the Worst* to *One of the Best)* "If you have your way, how likely is it that will be working for this organization five years from now?" (*Very Unlikely* to *Very Likely)* Basic statistics for the 3-item employee satisfaction/loyalty scale were: m = 11.24, md = 12.00, sd = 2.92, α = .79.

The final criterion, as distinct from the three intermediate criteria, was organizational performance. The three organizational performance items (with varying 10-point response anchors in parentheses) were: "Overall, how successful is the organization in accomplishing its mission and goals?" (*Completely Unsuccessful* to *Completely Successful*) "Overall, how does the organization's performance compare to the performance of similar, or competitive, organizations?" (*One of the Worst* to *One of the Best*) "Overall, what percent of maximum potential performance is the organization now achieving? (*0 percent to 10 percent of Potential* to *About 100 percent of Potential*) One *of the Best*) In light of the 10-point scales, the maximum organizational performance score was 30. Basic statistics were: m = 21.43, sd = 4.60, md = 22.00, α = .85.

We chose subjective rather than objective measures for multiple reasons. First, participants were unlikely to have had access to or knowledge about the information required to respond properly to objective measures. Even if participants had been able to respond accurately, selecting one or more objective indicators to yield a comprehensive, content-valid measure of organization performance would have been difficult. Metrics that are relevant for for-profit organizations vary across industries, and are likely not relevant to assessing the performance of nonprofit and governmental organizations. (It should be noted that the Cube one framework is theorized to be applicable to organizations in all sectors, and the present research examines predictions across sectors).

C. Cube One Taxonomy

To test the hypotheses advanced, data were obtained for each set of practices from the respondent reporting on his/her organization. (Limitations associated with having one respondent per organizations are addressed in the discussion section). Given that the maximum score for each set of practices was 130 (26 practices with a 5-point scale), we defined High scores as $\geq$ 100; Medium as $\geq$ 80 and < 100; and Low < 80). Using each participant's report of the frequency of practices, it is possible to classify their organization as High, Middle, or Low in the enactment of each set of practices. Using the aforementioned additive formulation, three High scores were equated to a predicted performance level of 9 (3 + 3 + 3), and two High scores and a Middle were equated to 8, and so forth down to Cube 27 which would have a predicted performance level of 3. All told, in addition to Cube One and Cube 27, there were seven cube/megacube categories.

V. Results

Descriptive statistics, Pearson intercorrelations, and internal consistency reliabilities for the seven variables in the present research, plus three demographic variables are shown in Table 1. Alphas indicate strong internal consistency reliability, particularly for the three sets of practices (all > .90) and Organizational Performance (.85). Alphas for the intermediate criteria were lower

but still adequate, ranging from .71 to .79. With regard to the discriminant validity of the seven variables examined in this research it should it be noted that the two demographic variables (age and sex of respondent) were unrelated with r = .00 and .05, respectively. Likewise, neither sector nor organization size was related to the criterion measures (with r = .00 and .06, respectively)—see Table 1.

Table 1: Basic Statistics and Correlation

	Variable	Mean	SD	N	1	2	3	4	5	6	7	8	9	10	11
1.	Sex	1.48	.50	851	-										
2.	Age	38.61	9.57	857	-.03	-									
3.	Sector	.84	.37	852	-.12	-.13	-								
4.	Organization Size	.69	.46	773	.01	.02	.01	-							
5.	Customer Practices	97.53	14.97	860	.11	.01	.09	.11	(.92)						
6.	Employee Practices	89.97	16.95	860	.02	.01	-.02	.02	.61	(.94)					
7.	Enterprise Practices	84.21	16.79	860	.04	-.03	.04	.07	.65	.84	(.94)				
8.	Customer Satisfaction/ Loyalty	12.41	2.20	860	-.00	.00	-.01	-.02	.29	.27	.25	(.71)			
9.	Employee Satisfaction/ Loyalty	11.24	2.92	860	.06	.06	-.11	.08	.40	.62	.57	.35	(.79)		
10.	Efficiency/ Effectiveness	10.43	2.33	860	.05	-.02	.06	.06	.52	.51	.62	.31	.52	(.76)	
11.	Organization Performance	21.43	4.60	860	.08	-.05	-.02	.07	.52	.48	.54	.31	.48	.63	(.85)

Note: Categorical variables: Sex, 1 = male, 2 = female; Sector, 1 =for-profit, 0 = not-for-profit (including government); Organization Size, 1 = $\geq$ 500 employees, 0 = < 500 employees.
Correlations $\geq$ .25 significant at $p < .001$, two-tailed; .11 to.13 $p < .01$, two-tailed; .07 to.09 $p < .05$, two-tailed.

Hypothesis 1 posited that ratings of organization performance would be higher in Cube One compared to Cube 27. As predicted, means were 25.16 and 14.61, respectively, t = 7.38, $p < .001$. d = 3.14. Cohen (1992) provides guidance as to the interpretation of the standardized mean effect size (d), with the following thresholds: .20 for small, .50 for medium, and .80 for large. Thus, the d statistic of 3.14 in the present research (comparing organizational performance in Cube One versus Cube 27) was substantially greater than large. In addition to examining organizational performance, differences in the three intermediate criteria (customer satisfaction/ loyalty, employee satisfaction/loyalty, and efficiency/effectiveness) were examined. Results were as follows: customer satisfaction/loyalty (t = 5.34, d = 1.36), employee satisfaction/loyalty (t = 7.60, d = 2.83), efficiency/ effectiveness (t = 7.09, d = 2.68)—see Table 2.

Hypothesis 2 posited that there would be a consistent, systematic relationship between predicted performance levels based on the seven cubes/megacubes and organizational performance. Table 2 provides means and standard deviations for the three intermediate criteria (customer satisfaction/loyalty, employee satisfaction/loyalty, efficiency/ effectiveness) and for organizational performance for the seven cubes/megacubes. We also calculated t-statistics for differences between means in adjacent cubes/megacubes and the d statistic for each adjacent comparison. Those statistics are shown in Table 2 as well.

Table 2: Means of Measures by Cube/Megacube and between Adjacent Cube/Megacube

			Customer Sat/Loyalty		Employee Sat/Loyalty		Efficiency/ Effectiveness		Organization Performance	
	Points	**N**	**M**	**SD**	**M**	**SD**	**M**	**SD**	**M**	**SD**
Cube 1	9	119	13.27	2.28	13.56	1.75	12.52	1.67	25.16	2.80
d / t			.09	.52	.39	2.75***	.51	3.68***	.52	3.75***
Megacube A	8	95	13.08	1.84	12.84	2.02	11.64	1.82	23.69	2.92
d / t			.19	1.60	.32	2.44*	.32	2.42*	.40	3.23***
Megacube B	7	148	12.62	2.68	12.19	2.03	11.08	1.72	22.29	3.81
d / t			.05	.47	.37	3.31**	.36	3.26**	.18	1.60
Megacube C	6	177	12.50	1.93	11.38	2.32	10.42	1.94	21.59	4.04
d / t			.20	1.65	.41	3.82***	.43	3.95***	.33	3.05**
Megacube D	5	165	12.14	1.74	10.36	2.64	9.57	2.03	20.23	4.19
d / t			.34	2.90**	.68	5.80***	.50	4.28***	.54	4.71***
Megacube E	4	138	11.50	2.05	8.43	3.07	8.54	2.14	17.86	4.57
d / t			.63	2.55***	.14	.56	.46	1.87	.69	2.74***
Cube 27	3	18	10.17	2.38	8.00	3.03	7.50	2.94	14.61	5.97

Note: Points: organizations were classified as being High (3 points), Middle (2 points), or Low (1 point) in levels of customer-, employee-, and enterprise-directed practices and placed in cubes or megacubes based on the summation. Cube One organizations were high on all three sets of practices and Cube27 were low on all three. Megacube A was composed of organizations rated High on two sets of practices and Middle on the third set. The standardized mean difference (*d*) and the independent sample *t* statistic are shown in rows for adjacent cubes/megacubes. We conducted multivariate analysis using SPSS's general linear model, The *F* statistic based on Wilks lambda for the fixed factor with the seven value categories was 23.87 (df 24, 969), p < .001, two-tailed, $\eta_p^2 = .14$.

*$p < .05$, two-tailed; **$p < .01$, two-tailed; ***$p < .001$, two-tailed

Hypothesis 3 posited that the nine cubes comprising the High enterprise-directed practices face (specifically Cubes One, 2, 3, 5, 8, 9, 12, 13, and 21—see Figure 2) would have higher levels of performance on the intermediate criterion of enterprise efficiency/effectiveness than the 18 cubes that constitute the middle and low slices below the High face. We conducted a multivariate analysis with organizational performance as well as the three intermediate criteria as dependent variables. As shown in Table 3, the *F* statistics based on Wilks lambda were statistically significant in all cases (i.e., for the entire sample and for subsamples of large and small, organizations and for-profit nonprofit organizations. The multivariate effect sizes (η_p^2) for the full sample were similar and well above the .14 threshold (Stevens, 2002) for large in all three analyses (high enterprise-directed face, .21; high customer-directed face, .22; and high employee-directed face, .19). We also averaged the three univariate partial eta-squared statistics (η_p^2) for each of the three face analyses and found them similar in (.10, .12, .10). It might be noted the results pertinent to Hypothesis 3 generalized to large and small organizations as well as to for-profit and nonprofit organizations. These data are provided in Table 3.

Table 3: Multivariate Analysis: High Practice Faces vs. Others (All Participants and Subgroups)

	Multivariate		Customer Sat/Loyalty		Employee Sat/Loyalty		Efficiency/ Effectiveness		Organization Performance	
	F	η_p^2	*B*	η_p^2	*B*	η_p^2	*B*	η_p^2	*B*	η_p^2
Enterprise-Directed Practices										
All	57.02***	.21	.92***	.04	1.89***	.10	1.87***	.16	3.78***	.17
Large	16.34***	.22	.88***	.04	1.81***	.10	1.90***	.17	3.58***	.16
Small	35.36***	.21	1.17***	.07	2.05***	.14	1.75***	.19	4.14***	.17
For-Profit	50.97***	.22	.90***	.10	2.03***	.12	1.88***	.17	3.91***	.18
Non-Profit	5.25**	.14	1.12**	.06	1.24**	.06	1.54***	.09	3.03***	.10
Customer-Directed Practices										
All	58.76***	.22	1.10***	.05	2.71***	.18	1.91***	.14	3.37***	.11
Large	39.11***	.23	1.02***	.04	2.74***	.19	1.96***	.14	3.39***	.11
Small	17.56***	.23	1.31***	.08	*2.86***	.17	2.05***	.16	3.11***	.09
For-Profit	48.19***	.21	1.06***	.05	*2.85***	.18	1.87***	.14	3.22***	.10
Non-Profit	9.38***	.22	1.37***	.09	1.86***	.12	2.05***	.15	3.94***	.15
Employee-Directed Practices										
All	50.30***	.19	.88***	.02	2.51***	.11	2.51***	.17	4.23***	.12
Large	31.28***	.19	.80***	.02	2.62***	.12	2.44***	.16	3.94***	.11
Small	12.50***	.17	1.26***	.04	2.23***	.07	2.55***	.16	4.41***	.12
For-Profit	42.42***	.19	.95***	.03	2.65***	.11	2.49***	.17	4.28***	.12
Non-Profit	5.85***	.15	.54	.01	1.73**	.06	2.12***	.10	4.24***	.11

Notes: *B* = general linear model beta coefficient. η_p^2 = partial eta squared. Large organizations: $\geq$ 500 employees. Small organizations: < 500 employees. The *F* statistic is based on Wilks lambda with fixed factors: 1 = High Practice Face, 0 = Others. All N Productivity Practices: High = 392, Others = 468. All N Customer Practices: High = 248, Others = 612. All N Customer Practices: High = 147, Others = 713.

** $p < .01$, two-tailed;*** $p < .001$, two-tailed.

Hypothesis 4 posited that the nine cubes constituting the High customer-directed practices face (specifically Cubes One, 3, 4, 7, 9, 10, 15, 17, and 23—see Figure 3) would have higher levels of performance on the intermediate criterion of customer satisfaction/loyalty than the 18 cubes that constitute the middle and low slices below the High face. For the sample as a whole, there was a significant association ($\eta_p^2 = .05$, $p < .001$); however, counter to expectation, the association was stronger with regard to the other two intermediate criteria. Results are presented in Table 4. Similar patterns were found for large and small organizations as well as for-profit and nonprofit organizations.

Hypothesis 5 posited that the nice cubes constituting the High employee-directed practices face (specifically Cubes One, 2, 4, 6, 8, 10, 14, 16, 22—see Figure 4) would have higher levels of performance on the intermediate criterion employee satisfaction/loyalty than the 18 cubes that constitute the middle and low slices below the High face. As predicted there was a significant difference ($\eta_p^2 = .11$, $p < .001$); however, the pattern was only partly as would be predicted. The High employee-directed practices face had weaker association with the intermediate criterion of customer satisfaction/loyalty ($\eta_p^2 = .02$), but higher association with the intermediate criterion of efficiency/effectiveness ($\eta_p^2 = .17$). Results, presented in Table 3 indicate similar patterns across sector and organization size.

VI Discussion

To date many different theories have been advanced that seek to explain important determinants of organizational performance. Many prominent theories, though, have not been directly tested due to the absence of instrumentation, for example the congruence model (Nadler and Tushman, 1992), and Lawler's four-factor model (1986; 1992). The Cube One framework is directly testable and provides a taxonomy that permits classifying organizations; it also is potentially relevant to diagnosing and improving organizations.

Although the Cube One framework does not purport to explain the performance of every organization, it does pertain to organizations that seek to create value and survive through the production of goods and provision of services. It is, therefore, relevant to both for-profit and nonprofit organizations. Although our literature review is not exhaustive, we have not found a model that systematically measures the frequency of enactment of practices pertinent to the academic disciplines of human resource management, marketing, quality management, industrial and organizational psychology, and operations management.

As hypothesized, higher levels of organizational performance were found for organizations in Cube One compared to Cube 27, and the difference was sizable (> 7 standard errors). Also, as predicted, there was a consistent relationship across all seven cubes/metacubes. We conducted a multivariate analysis using the SPSS general linear model. The *F* statistic based on Wilks lambda for the fixed factor with seven values (Cube 1, five megacubes, and Cube 27) was 23.87 (df 24, 969), $p < .001$, two-tailed with $\eta_p^2 = .14$.

There was partial support for the hypotheses pertaining to the three faces of the Cube One framework. Consistent with Hypothesis 3 the High Enterprise-direct practices face scored significantly higher on enterprise efficiency/effectiveness than the middle and low slices, and the patterns of association with other intermediate criteria were fully in conformance with a priori expectations. With regard to Hypothesis 4, the High customer-directed practices face had higher levels of customer satisfaction/loyalty than the middle and low slices, but did not "line up" with regard to the other criterion measures. Hypothesis 5 was supported, but results for the High employee-directed practices face did not conform fully to a priori expectations.

An examination of bi-variate relationships (see Table 2) provides a partial explanation for the present results. The single best predictor of Organizational Performance was the intermediate criterion enterprise efficiency/effectiveness ($r = .63$), and the single best predictor of enterprise efficiency/effectiveness was the summated score on enterprise-directed practices ($r = .62$). Also consistent with the theorized network, the best predictor of employee satisfaction/loyalty was the summated score on employee-directed practices ($r = .62$). However, customer satisfaction/ loyalty was only moderately associated with organizational performance ($r = .31$), and not more strongly associated with customer satisfaction/loyalty than were enterprise- and employee-directed practices ($r = .29$, $r = .25$, and $r = .27$, respectively).

While it is possible that the theorized framework is incorrect, a more plausible explanation for the weak results with regard to customer-directed practices and customer satisfaction/loyalty is that respondents were employees of the organization, not customers. Consequently, participants may have lacked the information required to answer these questionnaires item correctly, or knowledgably. Future research should obtain customer practices and criterion data from actual customers.

There are other limitations that might be noted. First, because all data were collected from the same source at the same point in time, there is the threat of common method variance. A few

facets of the present research mitigate this threat. As noted by Podsakoff, MacKenzie, Lee, and Podsakoff (2003), not all types of measures and item formats are equally susceptible to this threat. In this regard it is notable that we asked respondents to describe the frequency of observable practices, rather than the strength of their attitudes toward "vague concepts" (p. 888). Second, the intermediate criterion variables sued multiple anchors/endpoints, and the measure of organizational performance employed three different descriptors and a 10-point scale. The use of differing scale formats and anchors is recommended by Podsakoff et al. Third, we insisted on anonymity, specifically instructing potential respondents as follows: "Please do not put your name on this survey." This served to reduce evaluation apprehension.

Although it is not uncommon for research on human resource management practices to rely on a single source report (e.g., Delany and Huselid, 1996), Gerhart, Wright and McMahan (2000) reported finding relatively low interrater reliability when they asked different employees about organizational practices. Importantly, it should be noted that in the Gerhart *et al.* study, respondents were asked to provide detailed information about the proportion of the workforce "that is covered by or experience" specific benefits. This is rather detailed information. In the present research, respondents were asked to describe the frequency of relatively broad-gauged practice statements: e.g., "Employee layoffs are avoided where possible, by first attempting to place employees in other jobs within the organization."

The sample in the present research is large and includes a broad and diverse population, yet it is not representative of all organizations and may include sampling bias (cf. Denrell, 2003) which, if it exists, is unmeasured and unknown. The interests of three key participants were examined, but other stakeholders exist. Multicollinearity exists among the sets of practices and the intermediate criteria. Evidently, well run organizations tend to enact high levels of all three sets of practices.

As noted above, respondents in the present research were drawn from a pool of individuals taking training courses; hence the existence of non-response bias is difficult to calibrate insofar as there are no norms from a universe population. Perhaps the closest approach to gauging the representativeness of organizational respondents is by comparing results in the present research to the aforementioned prior survey study, both using the same 3-item organizational performance scale. Mean organizational performance scores were 21.43 and 20.11, respectively, a difference which indicated significantly higher performance in the present sample. However, in the present research 69 percent of respondents worked for large organizations, whereas in the prior sample 61 percent of respondents worked for large organizations. Controlling for organization size, the mean performance score in the prior study would have been 21.49—almost identical with the organizational performance score in the present research (of 21.43). The present endeavor began with extensive literature reviews across multiple disciplines to identify practices that contribute meaningfully and predictably to organization performance. It is not claimed, though, that final set of 78 practices provides "the" prescription for generating good performance, nor is it claimed that these practices are the best ones organizations can, or should, employ. Rather, the practices identified are but a sampling of the (large) universe of practices that might be employed. In any event, achieving and maintaining sustained competitive advantage appears to be an elusive goal (Wiggins and Ruefli, 2002).

In brief, the present research found large effects for the Cube One framework with regard to each set of practices and organizational performance. There was partial support for the three faces of the model, and results generalized to subsamples based on organization size and sector, findings supportive of external validity.

The Cube One framework may have substantial practical utility, providing managers with a tool to diagnose and intervene effectively in improving organization performance. It may be possible to discern if a particular organization is deficient in one or more of the three sets of practices, in which case there may be a need for more attention to enterprise-, customer- or employee-directed practices.

References

Barnard, C. I. 1938. *The Functions of the Executive***.** Cambridge, MA: Harvard University Press.

Berry, L. L., and K. D. Seltman. 2008. *Management Lessons from Mayo Clinic: Inside One of the World's Most Admired Service Organizations***.** New York: McGraw-Hill.

Boselie, P., G. Dietz, and C. Boon. 2005. "Commonalities and Contradictions in HRM and Performance Research." *Human Resource Management Journal*, 15: 67-94.

Cohen, J. 1992. "A Power Primer." *Psychological Bulletin*, 112: 155-159.

Cohen, J., and P. Cohen. 1983. *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences*. Hillsdale, NJ: L. Erlbaum Associates.

Collins, J. 2001. *Good to Great.* New York: HarperCollins.

Collins, J. C., and J. I. Porras. 1994. *Built to Last*. New York: HarperCollins.

Delaney, J. T., and M. A. Huselid. 1996. "The Impact of Human Resource Management Practices on Perceptions of Organizational Performance." *Academy of Management Journal*, 39: 949-969.

Denrell, J. 2003. "Vicarious Learning, Under Sampling of Failure, and the Myths of Management." *Organization Science*, 14: 227-243.

Gerhart, B., P. M. Wright, and G. C. McMahan. 2000. "Measurement Error and Estimates of the HR-firm Performance Relationship: Further Evidence and Analysis." *Personnel Psychology*, 53: 855-872.

Hansen, G. S., and B. Wernerfelt. 1989. "Determinants of Firm Performance: The Relative Importance of Economic and Organizational Factors." *Strategic Management Journal*, 10: 399-411.

Heskett, J. L., W. E. Sasser, Jr., and L. A. Schlesinger. 1997. *The Service Profit Chain: How Leading Companies Link Profit and Growth to Loyalty, Satisfaction, and Value.* New York: Free Press.

Heskett, J. L., W. E. Sasser, and J. Wheeler. 2008. *Ownership Quotient: Putting the Service Profit Chain to Work for Unbeatable Competitive Advantage*. Cambridge, MA: Harvard Business Press.

Jaworski, B. J., and A. K. Kohli. 1993. "Market Orientation: Antecedents and Consequences." Journal of Marketing, 57: 53-70.

Kopelman, R. 2012. "Validity Evidence for the Cube One Framework: A Cross-Lagged Panel Analysis of Objective Data." *The Journal of Business Inquiry*, 11: 1-12.

Lawler, E. E. III. 1986. *High-involvement Management*. San Francisco: Jossey-Bass.

Lawler, E. E. III. 1992. *The Ultimate Advantage*. San Francisco: Jossey-Bass.

Nadler, D. A., and M. L. Tushman. 1992. "Designing Organizations that have Good Fit: A Framework for Understanding New Architectures." In *Organizational Architecture*, ed. David A. Nadler, Marc. S. Gerstein, Robert. B. Shaw, and Associates, 39-56. San Francisco: Jossey-Bass.

Novak, D. 2012. *Taking People with You: The Only Way to Make BIG Things Happen*. New York: Portfolio/Penguin.

Pfeffer, J. 1998. *The Human Equation: Building Profits by Putting People First*. Cambridge, MA: Harvard Business School Press.

Podsakoff, P. M., S. B. MacKenzie, J-Y. Lee, and N. Podsakoff. 2003. "Common Method Biases in Behavioral Research: A Critical Review of the Literature and Recommended Remedies." *Journal of Applied Psychology,* 88: 879-903.

Pritchard, R. D., S. J. Weaver, and E. L. Ashwood. 2012. *Evidence-based Productivity Improvement: A Practical Guide to the Productivity Measurement and Enhancement System (ProMES).* New York: Routledge.

Pulakos, E. D. 2009. *Performance Management: A New Approach for Driving Business Results*. West Sussex, UK: Wiley.

Reichheld, F. F. 2006. *The Ultimate Question: Driving Good Profits and True Growth.* Cambridge, MA: Harvard Business School Press.

Simon, H. A. 1945/1997. *Administrative Behavior: Decision-making Processes in Administrative Organizations,* 4th ed. New York: The Free Press.

Stevens, J. P. 2002. *Applied Multivariate Statistics for the Social Sciences*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Tsoukas, H, and R. Chia. 2002. "On Organizational Becoming: Rethinking Organizational Change." *Organization Science*, 13: 567-582.

Welch, J. 2005. *Winning*. New York: HarperCollins.

Wiggins, R., and T. W. Ruefli. 2002. "Sustained Competitive Advantage: Temporal Dynamics and the Incidence and Persistence of Superior Economic Performance." *Organization Science*, 13: 82-105.

Appendix: Illustrative Journal Sources for Nine Practice Statements

Customer-Oriented Practice Statements

Statement: Multiple customer segments are targeted with differentiated products and/or marketing strategies.

Cronin Jr., J., and S. A. Taylor. 1992. "Measuring Service Quality: A Reexamination and Extension." *Journal of Marketing*, 56(3), 55-68.

Schneider, B., J. K. Wheeler, and J. F. Cox. 1992. "A Passion for Service: Using Content Analysis to Explicate Service Climate Themes." *Journal of Applied Psychology*, 77(5), 705-716.

Schreuder, H., P. van Cayseele, P. Jaspers, and B. de Graaff. 1991. "Successful Bear Fighting Strategies." *Strategic Management Journal*, 12(7), 523-533.

Statement: Complaints/problems are resolved quickly

Connor, T. 1999. "Customer-led and Market-oriented: A Matter of Balance." *Strategic Management Journal*, 20(12), 1157-1163.

Keller, K. 1991. "Cue Compatibility and Framing in Advertising." *Journal of Marketing Research*, 28(1), 42-57.

Matsuno, K., and J. T. Mentzer. 2000. "The Effects of Strategy Type on the Market Orientation—Performance Relationship." *Journal of Marketing*, 64(4), 1-16.

Smith, A. K., R. N. Bolton, and J. Wagner. 1999. "A Model of Customer Satisfaction with Service Encounters Involving Failure and Recovery." *Journal of Marketing Research*, 36(3), 356-372.

Statement: All employees, including senior management, are regularly exposed to customers.

Agrawal, D., and R. Lal. 1995. "Contractual Arrangements in Franchising: An Empirical Investigation." *Journal of Marketing Research*, 32(2), 213-221.

Ganesan, S. 1993. "Negotiation Strategies and the Nature of Channel Relationships." *Journal of Marketing Research*, 30(2), 183-203.

Hennart, J., T. Roehl, and D. S. Zietlow. 1999. "`Trojan Horse' or `Workhorse'? The Evolution of U.S.–Japanese Joint Ventures in the United States." *Strategic Management Journal*, 20(1), 15-29.

Jap, S. D. 1999. "Pie-expansion Efforts: Collaboration Processes in Buyer-supplier Relationships." *Journal of Marketing Research*, 36(4), 461-475.

Kumar, N., L. K. Scheer, and J. M. Steenkamp. 1995. "The Effects of Perceived Interdependence on Dealer Attitudes." *Journal of Marketing Research*, 32(3), 348-356.

Kumar, N., L. K. Scheer, and J. M. Steenkamp. 1995. "The Effects of Supplier Fairness on Vulnerable Resellers." *Journal of Marketing Research*, 32(1), 54-65.

Matsuno, K., and J. T. Mentzer. 2000. "The Effects of Strategy Type on the Market Orientation-performance Relationship." *Journal of Marketing*, 64(4), 1-16.

Powell, T. C., and A. Dent-Micallef. 1997. "Information Technology as Competitive Advantage: The Role of Human, Business, and Technology." *Strategic Management Journal*, 18(5), 375-405.

Richardson, J. 1993. "Parallel Sourcing and Supplier Performance in the Japanese Automotive Industry." *Strategic Management Journal*, 14(5), 339-350.

Employee-Oriented Practice Statements

Statement: Managers serve as mentors to junior staff.

Arthur, J. B., and J. B. Dworkin. 1991. "Current Topics in Industrial and Labor Relations Research and Practice." *Journal of Management*, 17(3), 515-572.

Delaney, J. T., and M. A. Huselid. 1996. "The Impact of Human Resource Management Practices of Perceptions of Organizational Performance." *Academy of Management Journal*, 39(4), 949-969.

Feuille, P., and D. R. Chachere. 1995. "Looking Fair or Being Fair: Remedial Voice Procedures in Nonunion Workplaces." *Journal of Management*, 21(1), 27-42.

Karambayya, R., J. M. Brett, and A. Lytle. 1992. "Effects of Formal Authority and Experience on Third-party Roles, Outcomes, and Perceptions of Fairness." *Academy of Management Journal*, 35(2), 426-438.

Olson-Buchanan, J. B. 1996. "Voicing Discontent: What Happens to the Grievance Filer after the Grievance?" *Journal of Applied Psychology*, 81(1), 52-63.

Shaw, J. D., J. E. Delery, J. Jenkins, and N. Gupta. 1998. "An Organization-level Analysis of Voluntary and Involuntary Turnover." *Academy of Management Journal*, 41(5), 511-525.

Terpstra, D. E., and D. D. Baker. 1992. "Research Notes: Outcomes of Federal Court Decisions on Sexual Harassment." *Academy of Management Journal*, 35(1), 181-190.

Statement: Employees are assisted in balancing work and family responsibilities (e.g., through dependent care, flexible scheduling).

Aryee, S., D. Fields, and V. Luk. 1999. "A Cross-cultural Test of a Model of the Work-family Interface." *Journal of Management*, 25(4), 491-511.

Carlson, D. S., and P. L. Perrewé. 1999. "The Role of Social Support in the Stressor-strain Relationship: An Examination of Work-family Conflict." *Journal of Management*, 25(4), 513-540.

Grover, S. L., and K. J. Crooker. 1995. "Who Appreciates Family-responsive Human Resource Policies: The Impact of Family-friendly Policies on the Organizational Attachment of Parents and Non-parents." *Personnel Psychology*, 48(2), 271-288.

Ornstein, S., and L. A. Isabella. 1993. "Making Sense of Careers: A Review 1989-1992." *Journal of Management*, 19(2), 243-268.

Lambert, S. J. 2000. "Added Benefits: The Link between Work-life Benefits and Organizational Citizenship Behaviors." *Academy of Management Journal*, 43(5), 801-815.

Perry-Smith, J. E., and T. C. Blum. 2000. "Work-family Human Resources Bundles and Perceived Organizational Performance." *Academy of Management Journal*, 43(6), 1107-1117

Pierce, J. L., and R. B. Dunham. 1992. "The 12-hour Work Day: A 48 Hour, Eight-day Week." *Academy of Management Journal*, 35(5), 1086-1098.

Tompson, H. B., and J. M. Werner. 1997. "The Impact of Role Conflict/facilitation on Core and Discretionary Behaviors: Testing a Mediated Model." *Journal of Management*, 23(4), 583-601.

Statement: Employees are trusted, respected, and treated fairly.

Hartline, M. D., J. G. Maxham III, and D. O. McKee. 2000. "Corridors of Influence in the Dissemination of Customer-oriented Strategy to Customer Contact Service Employees." *Journal of Marketing*, 64(2), 35-50.

Hyatt, D. E., and T. M. Ruddy. 1997. "An Examination of the Relationship between Work Group Characteristics and Performance: Once More into the Breach." *Personnel Psychology*, 50(3), 553-585.

Konovsky, M. A., and S. Pugh. 1994. "Citizenship Behavior and Social Exchange." *Academy of Management Journal*, 37(3), 656-669.

Moorman, R. H., G. L. Blakely, and B. P. Niehoff. 1998. "Does Perceived Organizational Support Mediate the Relationship between Procedural Justice and Organizational Citizenship Behavior?" *Academy of Management Journal*, 41(3), 351-357.

Naumann, S. E., and N. Bennett. 2000. "A Case for Procedural Justice Climate: Development and Test of a Multilevel Model." *Academy of Management Journal*, 43(5), 881-889.

Powell, T. C., and A. Dent-Micallef. 1997. "Information Technology as Competitive Advantage: The Role of Human, Business, and Technology." *Strategic Management Journal*, 18(5), 375-405.

Ragins, B., J. L. Cotton, and J. S. Miller. 2000. "Marginal Mentoring: The Effects of Type of Mentor, Quality of Relationship, and Program Design of Work and Career Attitudes." *Academy of Management Journal*, 43(6), 1177-1194.

Robinson, S. L., M. S. Kraatz, and D. M. Rousseau. 1994. "Changing Obligations and the Psychological Contract: A Longitudinal Study." *Academy of Management Journal*, 37(1), 137-152.

Schneider, B., J. K. Wheeler, and J. F. Cox. 1992. "A Passion for Service: Using Content Analysis to Explicate Service Climate Themes." *Journal of Applied Psychology*, 77(5), 705-716.

Scott, S. G., and R. A. Bruce. 1994. "Determinants of Innovative Behavior: A Path Model of Individual Innovation in the Workplace." *Academy of Management Journal*, 37(3), 580-607.

Wanous, J. P., T. D. Poland, S. L. Premack, and K. Davis. 1992. "The Effects of Met Expectations on Newcomer Attitudes and Behaviors: A Review and Meta-analysis." *Journal of Applied Psychology*, 77(3), 288-297.

Productivity-Oriented Practice Statements

Statement: The mission statement and core values are well communicated.

Audia, P. G., E. A. Locke, and K. G. Smith. 2000. "The Paradox of Success: An Archival and a Laboratory Study of Strategic Persistence following Radical Environmental Change." *Academy of Management Journal*, 43(5), 837-853.

Harrison, D. A., K. H. Price, and M. P. Bell. 1998. "Beyond Relational Demography and the Effects of Surface- and Deep-level Diversity on Work Group Cohesion." *Academy of Management Journal*, 41(1), 96-107.

Iaquinto, A. L., and J. W. Fredrickson. 1997. "Top Management Team Agreement about the Strategic Decision Process: A Test of its Determinants and Consequences." *Strategic Management Journal*, 18(1), 63-75.

St. John, C. H., and L. W. Rue. 1991. "Research Notes and Communications Co-ordinating Mechanisms, Consensus between Marketing and Manufacturing Groups, and Marketplace Performance." *Strategic Management Journal*, 12(7), 549-555.

Sawyer, J. E. 1992. "Goal and Process Clarity: Specification of Multiple Constructs of Role Ambiguity and a Structural Equation Model of their Antecedents and Consequences." *Journal of Applied Psychology*, 77(2), 130-142.

Spreitzer, G. M. 1996. "Social Structural Characteristics of Psychological Empowerment." *Academy of Management Journal*, 39(2), 483-504.

Vancouver, J. B., R. E. Millsap, and P. A. Peters. 1994. "Multilevel Analysis of Organizational Goal Congruence." *Journal of Applied Psychology*, 79(5), 666-679.

Vancouver, J. B., and N. W. Schmitt. 1991. "An Exploratory Examination of Person-organization Fit and Organizational Goal Congruence." *Personnel Psychology*, 44(2), 333-352.

Witt, L. A. 1998. "Enhancing Organizational Goal Congruence: A Solution to Organizational Politics." *Journal of Applied Psychology*, 83(4), 666-674.

Statement: Employees are encouraged to develop both new and existing customers.

Bitner, M., B. H. Booms, and L. A. Mohr. 1994. "Critical Service Encounters: The Employee's Viewpoint." *Journal of Marketing*, 58(4), 95-106.

Hyatt, D. E., and T. M. Ruddy. 1997. "An Examination of the Relationship between Work Group Characteristics and Performance: Once More into the Breach." *Personnel Psychology*, 50(3), 553-585.

Matsuno, K., and J. T. Mentzer. 2000. "The Effects of Strategy Type on the Market Orientation-performance Relationship." *Journal of Marketing*, 64(4), 1-16

Powell, T. C. and A. Dent-Micallef. 1997. "Information Technology as Competitive Advantage: The Role of Human, Business, and Technology." *Strategic Management Journal*, 18(5), 375-405.

Schaubroeck, J., D. C. Ganster, W. E. Sime, and D. Ditman. 1993. "A Field Experiment Testing Supervisory Role Clarification." *Personnel Psychology*, 46(1), 1-25.

Simons, R. 1991. "Strategic Orientation and Top-management Attention to Control Systems." *Strategic Management Journal*, 12(1), 49-62.

Statement: Employees are provided annual professional training.

Baldwin, T. T., R. J. Magjuka, and B. T. Loher. 1991. "The Perils of Participation: The Effects of Choice of Training on Trainee Motivation and Learning." *Personnel Psychology*, 44(1), 51-65.

Frayne, C. A., and J. Geringer. 2000. "Self-management Training for Improving Job Performance: A Field Experiment Involving Salespeople." *Journal of Applied Psychology*, 85(3), 361-372.

Hyatt, D. E., and T. M. Ruddy. 1997. "An Examination of the Relationship between Work Group Characteristics and Performance: Once More into the Breech." *Personnel Psychology*, 50(3), 553-585.

Jones, R. G., and M. D. Whitmore. 1995. "Evaluating Developmental Assessment Centers as Interventions." *Personnel Psychology*, 48(2), 377-388.

Snell, S. A., and J. W. Dean, Jr. 1992. "Integrated Manufacturing and Human Resource Management: A Human Capital Perspective." *Academy of Management Journal*, 35(3), 467-504.