

Rationale and Validity Evidence for the Cube One Framework

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The Cube One framework posits that successful organizations enact practices that help accomplish the aims of three key stakeholders: investors/taxpayers, customers, and employees. The interests of these parties require organizations to be efficient (productive) with regard to the use of all resources, to provide goods/services which promote customer satisfaction and loyalty, and to enact human resource practices which sustain employee satisfaction/loyalty. In brief, as Tsoukas and Chia put it (2002: 577, emphasis in original), organizations do not simply work; they *are made* to work.

To date, research and writing on the Cube One framework has primarily focused on developing its theoretical rationale and demonstrating relevance to management via in-depth analyses of case studies. Evidentiary support has also been obtained using assessments of managerial practices (e.g., people management) as reported in *Fortune's* annual ratings of America's Most Admired Companies and examining relationships between these ratings and (within-industry) market capitalization data. The present inquiry examines survey data to test hypotheses pertinent to the validity of the Cube One framework.

The Cube One framework envisions that the management of an organization selects portfolios of practices pertinent to each of the three above-mentioned stakeholders. Axiomatic to the proposed framework are three assumptions. First, enacted practices, rather than espoused policies, are critical. Espoused *policies* may provide a basis for preferring and selecting management *practices*, but the latter are more proximate determinants of organizational performance. Further, although espoused policies may provide satisfaction by their mere contemplation or

vocalization, it is practices which directly make organizations “work.” This distinction parallels what Argyris (1976) has referred to as the difference between espoused theories and theories in use—a disjunction which resembles Pfeffer and Sutton’s (2000) knowing-doing gap.

A second axiom (or assumption) is that more accurate information regarding extant practices will be obtained from active organizational participants (employees and customers) than from policy manuals, or even the observations of high-level managers. For instance, it is not uncommon for organizations to claim that they employ a merit reward system when, empirically, there is frequently a negative relationship between rated performance and pay increases (e.g., Kopelman *et al.*, 1991). Likewise, organizations often claim to have adopted “family friendly” work-life policies, when in actuality such policies are unavailable, or only available with penalties (Thompson, 2008).

The third assumption is that practices are additive and substitutable, i.e., there are multiple ways to achieve the aims of the three key stakeholders. It is not possible, therefore, to identify or specify an ideal set of practices for achieving productivity, customer satisfaction/loyalty, and employee satisfaction/loyalty. Rather, new techniques develop over time, and existing techniques are modified, and sometimes simply renamed. This assumption (of equifinality) is consistent with Abrahamson’s (1996) observation that, over the years, there has been a continuing succession of management “fashions.” Thus, the selection of practice portfolios may be viewed as akin to developing a test of knowledge about a particular subject matter: there is a large universe of valid test items.

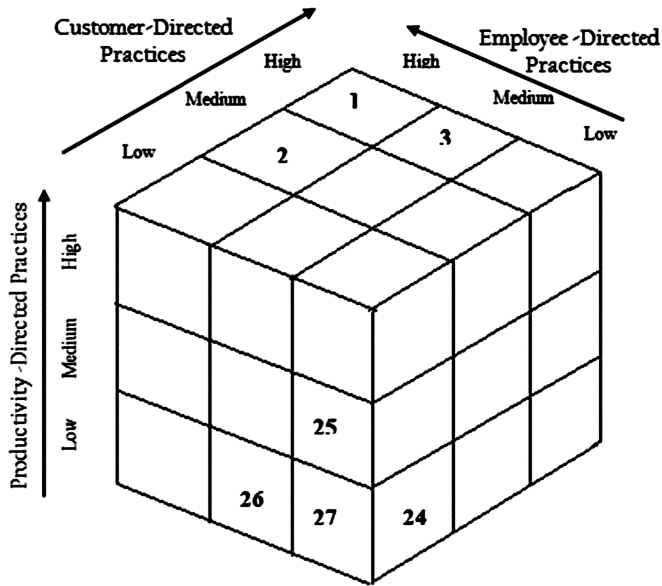
THEORETICAL FRAMEWORK

There are multiple stakeholders that have an interest in the success of an organization; this study focuses on three: investors/funders, customers, and employees. The interests of these parties require organizations to engage in practices that are promotive of the efficient use of resources (productivity), effective in creating products/services that achieve customer satisfaction and loyalty, and create an organizational climate that promotes employee satisfaction and loyalty. A schematic representation of the three-dimensional framework appears in Figure I.

Productivity-directed Practices

Whether an organization is a for-profit company, a governmental agency, or a nonprofit entity, it must make efficient use of its resources. Productive organizations will, almost by definition, have lower costs of goods/services sold, and this can enable the enterprise to reduce prices or provide a superior product/service for the same price. Productivity also permits an organization to invest in research and development, i.e., to manage for the future as well as the present, to raise employee pay (due to a higher marginal revenue product), and to attract capital via stock or debt in the for-profit sector, or grants, donations, dues, fees, or taxes in the nonprofit/government sector.

Figure I
Schematic Representation of the Cube One Framework



Practices that promote a high level of employee work motivation, or increase an employee’s authority to act, or raise employee job-related ability have been shown to improve task performance and productivity. Such practices include goal setting, training, performance measurement and feedback, systematic employee selection, flexible job assignments and production systems, decentralization of decision-making, and appropriate performance-contingent rewards (e.g., Cascio, 2006; Latham, 2007; Pfeffer and Sutton, 2006).

Productivity improvements can also be obtained by using nonhuman resources more efficiently. Bethune (1998) in *From Worst to First* described how the turnaround at Continental Airlines was achieved, in part, by eliminating pervasive inefficiencies, such as flights with consistently low capacity utilization. In one droll vignette, the president noted that there were six flights daily between two small cities, Greensboro, NC and Greenville, SC, and he quipped “Why are there six flights a day when both customers who want to fly that route are on the first flight?” (Brenneman, 1998)

According to Drucker (2005), efficiency is essential for nonprofit as well as for-profit organizations. Having good intentions will not substitute for achieving measurable results within the limits imposed by timelines and budgets. Likewise, donors and grantors are increasingly vigilant with regard to how their funds are used; and even religious organizations are competing for membership dues and contributions.

In light of the above, the following proposition is advanced:

Hypothesis 1. *There will be a positive relationship between productivity-directed practices enacted and organizational performance. This relationship will hold for for-profit organizations (Hypothesis 1a), nonprofit/ government organizations (Hypothesis 1b), large organizations (Hypothesis 1c), and small organizations (Hypothesis 1d).*

Customer-directed Practices

Achieving a high level of productivity is a necessary, but insufficient, condition for achieving excellent organizational performance. Efficiency does not assure that desired goods or services are being produced or provided, or that the enterprise is effective in satisfying and retaining its customers. Research has documented a number of customer-directed practices which reliably improve customer satisfaction and sales. Franke and Park (2006) have examined the importance of adaptive selling behaviors and customer orientation in more than 150 samples. There is also abundant evidence that customer satisfaction is related to repurchase intentions (e.g., Naumann and Giel, 1995). Over the past decade the need for effectiveness in product/service quality has risen to the extent that some commentators say that customer satisfaction is no longer adequate for survival. Rather, the bar has been raised to the height that organizations need to exceed customers' expectations and not just satisfy, but rather delight customers with outstanding service/products (Keiningham and Vavra, 2001).

From an economic standpoint, Reichheld (1996) argues that customer loyalty is much more important than satisfaction. He and his colleagues at Bain have found that a five percent increase in customer retention (i.e., repurchase rate) increases the net present value of the average customer by about 60%. This sizable payoff is attributable to the lower cost of customer acquisition, consistent revenue growth, cost savings, referrals, and premium pricing (Reichheld, 1996). In *The Ultimate Question*, Reichheld (2006) notes that customer satisfaction scores are only weakly related to customer loyalty; consequently, the focus should be on loyalty. Reichheld (2006) recommends customers be asked one simple question: "How likely is it that you would recommend us to a friend or colleague?" Companies with high repeat-purchase rates such as Costco, Harley-Davidson, Enterprise Rent-A-Car, and Amazon achieve loyalty through the adoption of practices that entail the creation of a culture of service. In the words of the human resource director of the fabled Four Seasons hotel chain: "First, you must decide what you stand for, and then you must align all of your systems to reinforce it. You recruit for it, you select for it, you orient for it, you train for it, you reward it, you promote for it, and you terminate those who don't have it" (Reichheld, 2006: 142).

Google is known for its dedication toward enhancing the experience of users (Kopelman and Chiou, 2010). Among its customer-directed practices is the continuous improvement of products/services (which some commentators characterize as a perpetual "beta" status), and a wide range of service offerings. Product/service lapses are followed by rapid and effective recoveries. In brief, Google's efforts to satisfy customers have been seen as reflecting a "pursuit of perfection."

Chatman and Cha (2003) describe an example of extraordinary customer service at a Nordstrom store. After trying on nine pairs of shoes, the customer still could not get the right size/color/style combination. An associate who was watching this encounter called other Nordstrom stores and eventually tracked down the desired shoe at a nearby Macy's store. This associate then arranged for the shoes to be shipped overnight to the customer at Nordstrom's expense. Likewise, there is consistently excellent service at Disney's theme parks, where park employees ("cast members") model fastidious cleanliness and friendliness, and are consistently cheerful and polite, even after being repeatedly asked "What time is the 3 p.m. parade?" (Ford *et al.*, 2001)

The remarkable success of Zappos (Hsieh, 2010), the online shoe company, has largely been achieved through building a brand associated with exceptional customer service. As Hsieh put it, "a customer may order five pairs of shoes, try them on with five different outfits at home, and then send back the ones that don't fit or they simply don't like free of charge." (2010: 142) The return feature is for 365 days. Further, the company often surprises good customers with overnight shipping, and because warehouses operate 24/7, shoes ordered at midnight will be at their doorstep eight hours later. "This creates a WOW experience which customers remember for a very long time and tell their friends and family about." (Hsieh, 2010: 144) It might be noted that it is the unexpectedly high-level product/service feature that prompts customer loyalty according to Keiningham and Vavra (2001). Zappos does not offer lower prices than brick and mortar stores, but their unparalleled service is very attractive to many shoppers.

Another organization that provides extraordinary customer service is the Mayo Clinic. Berry and Seltman (2008) provide many poignant examples of the Mayo Clinic's dedication to patients. In one vignette, a doctor who was called in for an emergency at 2:00 a.m. saw a lab tech working away. When asked the next day what she was doing in the lab at 2:00 a.m., the lab tech said that she had accidentally used the wrong solution in a platelet antibody test and came in to do it right. After the doctor said she could have done the test the next day, the lab tech replied, "I can't have patients at Mayo Clinic waiting an extra day in the hospital because I fouled up a lab test." The doctor then told her that her behavior was laudable and she should put in for overtime. He described her reaction as follows: "She looked at me as if I had told her to rob the poor box in church. She replied with a certain outrage, 'Dr. Moore, I can't have Mayo paying me for my mistakes!'"

Conversely, Bethune (1998) notes how, before his arrival at Continental, some company practices consistently reduced customer satisfaction. In particular, the company's focus on reducing costs often created what Brenneman (1998) called "doom loops." To save money on fuel, pilots were financially rewarded if they beat pre-set fuel usage numbers which they accomplished by flying at slow speeds with the air conditioning turned off. Passengers typically arrived late and were irritable, and employees were usually unhappy as well.

As is evident, numerous practices can be used by organizations to improve customer satisfaction and loyalty. These would include conducting and responding to customer surveys and focus groups, constantly improving the quality of products and services, customizing product/service offerings to individuals' tastes, authorizing employees to make decisions that will increase customer satisfaction, and responding

effectively to a product or service lapse (e.g., Brown, 1998; Ford *et al.*, 2001; Reichheld, 2006; Schneider and Bowen, 1995).

In light of the above evidence and reasoning, the following hypothesis is advanced:

***Hypothesis 2.** There will be a positive relationship between in customer-directed practices enacted and organizational performance. This relationship will hold for for-profit organizations (Hypothesis 2a), nonprofit/ government organizations (Hypothesis 2b), large organizations (Hypothesis 2c), and small organizations (Hypothesis 2d).*

Employee-directed Practices

According to the Cube One framework, it is also necessary for organizations to satisfy and earn the loyalty of their employees, people who Rosenbluth and Peters (2002) refer to as internal customers. Rosenbluth and Peters (2002) assert in *The Customer Comes Second* that management cannot reasonably expect employees to treat customers better than they (employees) feel they are being treated. Indeed, Rosenbluth and Peters (2002) largely attribute the success of Rosenbluth Travel (revenues growing from \$20 million to over \$6.2 billion in 25 years, while maintaining above-industry profitability) to the practices they have implemented to improve employee satisfaction and loyalty. In addition to such conventional practices as employee focus groups and surveys, Rosenbluth Travel employed some fairly idiosyncratic ways of developing a warm, friendly climate. On day one, new employees were served tea by the high-level executives (including Hal Rosenbluth), instead of just filling out the customary forms in the HR department.

Costco is famous for its employee-directed practices. It provides health insurance to its 93,000 domestic employees and pays 90% of the cost. Notes CEO Jim Sinegal, "We're 100% committed to maintaining this program. It works for us and our people count on it. We think they're entitled to this security." (Bary, 2007: 32) Perhaps, not coincidentally, Costco has one of the lowest turnover rates in retailing. Among employees who have been with the firm more than one year, just six percent leave annually (Bary, 2007).

Google is famous for the lengths to which the company has gone to satisfy their employees. Among their most prominent employee-directed practices are the following three. The widely beloved "20 percent rule" allows employees to spend one-fifth of their time (either spread out or batched) pursuing projects of personal interest, with the hope that side projects may lead to new Google management practices or service offerings. To improve the work-life experiences of employees, many of life's mundane tasks are facilitated by providing on-premises access to laundry services, day care, physicians, haircuts, and, famously, exceptionally high-quality food prepared by chefs. There are also dozens of shuttle buses with leather seats and wireless access, which permit pets and bikes, and which operate on two shifts free of charge.

One practice that has been widely found to foster employee satisfaction and loyalty is employment security. With employment security, an organization makes a concerted effort to protect employees' jobs, but does not guarantee that employees will

continue to perform the same tasks or functions. With regard to the importance of employment security, Sadami Wada, vice president of Sony, commented as follows: "I understand why some American companies fail to gain the loyalty and dedication of their employees. Employees cannot care for an employer who is prepared to take their livelihood away at the first sign of trouble." (Tomasko, 2002) Consistent with its employee-centered management approach, Southwest Airlines did not layoff any employees after the meltdown in air travel following the 9/11 disaster (Pfeffer and Sutton, 2006).

Managerial policies that are seen as treating people fairly, that entail the minimization of status differentials (e.g., everyone is an "Associate"), that reflect trust in employees (such as by sharing information), that provide employment security, and that are conducive to minimizing work-family conflict should be primarily effective in promoting employee satisfaction and loyalty (e.g., Cascio, 2006; Chatman and Cha, 2003; Fulmer *et al.*, 2003; Wayhan and Werner, 2000).

Accordingly, the following hypothesis is advanced:

***Hypothesis 3.** There will be a positive relationship between the extent to which organizations engage in employee-directed practices and organizational performance. This relationship will hold for for-profit (Hypothesis 3a), nonprofit/government (Hypothesis 3b), large (Hypothesis 3c), and small (Hypothesis 3d) organizations.*

Cube One Taxonomy

For each set of practices, it is possible to classify organizations in terms of High, Middle, and Low levels of enactment, yielding in three-dimensional space a taxonomy comprised of 27 cubes ranging from the lowest (Low, Low, Low = Cube 27) to the highest (High, High, High = Cube One). Between these two extremes are 25 cubes that can be collapsed into three "Mega cubes:" Cubes 2-10 (ranging from two high scores and one medium score to two highs and one low—labeled Mega cube A; Cubes 11-17—Mega cube B, and Cubes 18-26 (ranging from two lows and one medium to two lows and one high)—Mega cube C.

In light of these classifications, the following hypothesis is advanced:

***Hypothesis 4.** Organizational performance will be higher in Cube One compared to Cube 27. It is also anticipated that levels of performance will be positively related to levels predicted by the Cube One categories—namely from high to lowest: Cube One, Mega cube A, Mega cube B, Mega cube C, and Cube 27 (Hypothesis 4a).*

METHODS

Sample and Procedure

Participants were currently employed individuals attending part-time graduate programs in New York City or recently employed individuals attending a full-time

MBA program. Respondents described the organizations where they currently or recently (within the past year) worked. All data were provided anonymously and voluntarily. Of the 694 respondents, slightly more than half were male (53.1%), mean salary was \$57,197 (SD = 33,860), mean age was 30.94 years, and 68.7% worked in the private sector.

Measures

Productivity practices were assessed with a 10-item scale that incorporated a sample of practices previously found to have a consistent and sizable effect on productivity (Cascio, 2006; Pfeffer and Sutton, 2006). Responses were provided on a five-point scale with anchors ranging from 1 = never or almost never to 5 = always or almost always. (The same rating format was employed for the other two sets of practices.) A sample item is: "Individuals are held accountable for accomplishing specific (quantifiable) goals." Similarly, a 10-item scale was constructed to measure practices that should enhance customer satisfaction and loyalty. A sample statement is: "Products and/or services are continually upgraded as part of an ongoing program of quality improvement." A 10-item scale used to sample practices that should enhance employee satisfaction included the statement, "The organization responds to employee concerns by taking appropriate actions, not just by words." Summated scores on each set of practices could range from 10 to 50. The 30 practices are provided in Figure II.

Figure II
Items Assessing Productivity (P),
Customer (C) and Employee (E) Directed Practices

- P. Individuals are held accountable for accomplishing specific (quantifiable) goals.
- P. Individuals receive specific performance feedback that is useful for improving their performance.
- P. Where possible, the performance of individuals and groups is quantifiably measured and monitored over time.
- P. Salary increases (e.g., raises, bonuses) are proportionate to an individual's job performance.
- P. Promotions are based almost entirely on job performance.
- P. Individuals are selected for employment based on objective criteria (e.g., written tests, performance tests, work samples, etc.).
- P. Training is provided for employees who need to upgrade their knowledge and skills.
- P. Organizational performance improvement is financially rewarded by a group incentive plan (e.g., gainsharing, profit-sharing, etc.).
- P. Management encourages the delegation of decision-making authority to lower-level employees (i.e., real empowerment).
- P. Individuals are encouraged to perform a wide variety of tasks whenever possible.

Figure II (continued)
Items Assessing Productivity (P),
Customer (C) and Employee (E) Directed Practices

- C. Customers are regularly surveyed via questionnaire regarding their satisfaction with products and/or services.
- C. Focus groups (i.e., in-depth interviews) are regularly held with customers to gain a fuller understanding of wants and/or needs.
- C. Products and/or services are continually upgraded as part of an ongoing program of quality improvement.
- C. The best practices of competitors are studied and adopted, or improved upon, where possible (i.e., benchmarking).
- C. The goal of customer satisfaction importantly influences operational decisions at all organization levels.
- C. Prices of goods/services are continually reviewed to improve the organization's competitive position.
- C. The quality of products/services is regularly assessed by an independent organization as part of a continuing audit.
- C. Customer satisfaction is an important factor in determining pay increases of individuals or departments.
- C. Employees are granted wide latitude to use their own judgment in order to satisfy customers.
- C. Product or service innovations are regularly sought and budgeted for on a continuing basis.

- E. Open, two-way communication is employed. All employees are informed about new developments and encouraged to express their ideas and complaints.
- E. Distinctions between hierarchical ranks are minimized. Management downplays status symbols (e.g., executive dining rooms and other perks).
- E. Employee layoffs are avoided where possible, by first attempting to place employees in other jobs within the organization.
- E. Employee growth is encouraged by providing in-house training and/or reimbursements for outside training/educational programs.
- E. Work-family conflicts are minimized by adopting such policies as flexible work hours, day care assistance, and encouraging managerial tolerance.
- E. The organization responds to employee concerns by taking appropriate actions, not just by words.
- E. Managerial integrity is demonstrated in dealing with employees. All employees are given the same information; promises are kept.
- E. Employees are treated with respect and as mature adults. Communications are straight-forward, not condescending or patronizing.
- E. Employees know they can make (a few) mistakes. Management attempts to minimize the role of punishment and fear.
- E. Management encourages employees to feel that they are part of a team.

Organizational performance was measured with a three-item scale: (1) "Overall, how successful is the organization in accomplishing its mission and goals," (2) "Overall, how does the organization's performance compare to the performance of similar, or competitive, organizations," and (3) "Overall, at what percent of maximum potential performance (the maximum being 100%) is the organization now achieving." Each item was rated on a 10-point scale with anchors specific to each statement. Organizational performance as perceived by respondents, therefore, potentially ranged from three to 30.

Pertinent to the construct validity of these four measures, and to the potential threat of common method bias, two conceptually unrelated measures were also included in the survey. Specifically, these were one-item statements reflective of personal self-efficacy and benign worldview. The former: "In general, a person can accomplish whatever he/she sets out to accomplish." The latter: "In the long run, those people who work the hardest achieve the most success in life."

Cube One Taxonomy

As noted above, organizations in the high category on all three sets of practices (HHH) were in Cube One; those low in all three sets of practices (LLL) were in Cube 27. Between these two extremes, organizations were classified into "mega cubes:" Cubes 2-10 (ranging from two high scores and one medium score, to two highs and one low)—labeled Mega cube A; Cubes 11-17—Mega cube B, Cubes 18-26 (ranging from two lows and one medium to two lows and one high)—Mega cube C.

RESULTS

Internal consistency reliability estimates were acceptable for all four key measures, namely: the sum of productivity-directed practices (for brevity "PSum"), the sum of customer satisfaction-directed practices ("CSum"), the sum of employee-directed practices ("ESum"), and perceived organizational performance, with alphas ranging from 0.77 to 0.86 (see Table 1). For the sample as a whole, correlations between these four measures and the unrelated measure of self-efficacy ranged from 0.02 to 0.07; correlations with the benign worldview item ranged from -0.06 to -0.00. (For brevity, further reference to our measure of perceived organizational performance, is denoted simply as organizational performance.)

Table 1
Basic Statistics and Correlations

Variable	M	SD	N	1	2	3	4	5	6	7	8
1. Sector	0.68	0.47	686	-							
2. Size	0.61	0.49	368	-0.20	-						
3. Salary	10.16	0.53	530	0.04	0.11	-					
4. Gender	1.53	0.50	688	0.10	-0.02	0.14	-				
5. Productivity Practices (PSum)	31.04	6.90	692	0.19	0.18	0.11	-0.01	(0.77)			
6. Customer Practices (CSum)	28.25	7.92	685	0.16	0.29	0.01	0.01	0.63	(0.83)		
7. Employee Practices (ESum)	31.41	7.80	688	0.01	0.15	0.07	0.07	0.60	0.52	(0.86)	
8. Organizational Performance	20.11	5.06	691	-0.02	0.17	0.07	0.02	0.50	0.42	0.52	(0.84)

Note: Categorical variables: Sector: nonprofit/government = 0; for-profit = 1; Size: < 500 employees = 0; ≥ 500 employees = 1; Gender: female = 0; male = 1. Salary transformed into natural logs. Productivity-directed, customer-directed and employee-practices centered around means (31.04, 28.25, and 31.41, respectively). Cronbach alpha coefficients of internal consistency appear on the diagonal.
Correlations ≥ 0.19 significant at $p < 0.001$, two-tailed; from 0.14 to 0.18 at $p < 0.01$, two-tailed; from 0.10 to 0.11 at $p < 0.05$, two-tailed.

Table 1 presents correlational results for the entire sample. As hypothesized, PSum, CSum, and ESum were positively related to organizational performance for the sample as a whole ($r = 0.50, 0.42, \text{ and } 0.52$, respectively). Results found in the nonprofit/government subsample ($r = 0.58, 0.45, \text{ and } 0.61$) were similar to those in the for-profit subsample ($r = 0.49, 0.43, \text{ and } 0.47$)—see Table 2. Somewhat surprisingly, the correlation between ESum and organizational performance was higher in the nonprofit/government sector than it was in the for-profit sector ($Z = 2.44, p = 0.02$). With regard to organizational size, correlations between PSum, CSum, and ESum with organizational performance were roughly the same in large as compared to small organizations ($r = 0.52, 0.38, \text{ and } 0.48$) versus ($r = 0.49, 0.44, \text{ and } 0.54$), respectively (see Table 3). It might be noted that similar organizational performance levels were found in the for-profit and the nonprofit/government subsamples, along with similar correlations between practices and performance, notwithstanding higher levels of enactment of productivity- and customer-directed practices (PSum and CSum) in for-profit compared to nonprofit/governmental organizations. With regard to organizational size, higher scores on the three predictor variables (PSum, CSum, and ESum) and the dependent variable (organizational performance) were found among large compared to small organizations, but correlations among the predictors and dependent variable were essentially the same in both subsamples.

Entering sector and organizational size into a regression equation as controls in step 1, significant *Beta* coefficients were found for two of the three sets of practices when entered collectively at step 2 (see Table 4). *Beta* coefficients for productivity- and employee-directed practices were 0.25 and 0.30, respectively; however the *Beta* coefficient for customer-directed practices was 0.11 and only marginally significant ($p = 0.07$).

Mean organizational performance scores were compared for organizations classified in Cube One ($n = 82$) versus those in Cube 27 ($n = 73$). The difference was large with a t value of 14.27, $df 127.75, p \leq 0.001$, two-tailed. This effect size was also calculated in terms of d , the standardized mean difference. The result was $d = 2.22$; according to Cohen (1992), a d statistic in excess of 0.80 is defined “large.” Examining performance scores across the five major categories (Cube One, Mega cubes A, B, C, and Cube 27), analysis of variance results were significant: $F(4, 674) = 78.60, p \leq 0.001$, two-tailed. These results are presented in Table 5. Not only were performance scores different across all five categories, differences were significant between adjacent categories, the mean d being 0.54

Table 2
Basic Statistics and Correlations: For-Profit and Nonprofit/Government Subsamples

Variable	For-Profit			Nonprofit/Govt.			t-				
	M	SD	N	M	SD	N	Value	1	2	3	4
1. Productivity Practices (PSum)	31.92	7.00	467	29.10	6.28	217	5.07	-	0.53	0.65	0.56
2. Customer Practices (CSum)	29.07	7.75	463	26.44	8.04	214	4.01	0.67	-	0.52	0.44
3. Employee Practices (ESum)	31.44	7.78	464	31.24	7.91	216	0.03	0.60	0.53	-	0.59
4. Organizational Performance	20.01	5.06	466	20.26	5.09	217	-0.61	0.49	0.43	0.48	-

Note: Correlations for for-profit organizations appear below the diagonal and for nonprofit/government organizations appear on the upper right quadrant. All correlations significant at $p < 0.001$, two-tailed. T-values > 4.00 significant at $p < 0.001$, two-tailed.

Table 3
Basic Statistics and Correlations: Large and Small Organizations

Variable	Large			Small			t-				
	M	SD	N	M	SD	N	Value	1	2	3	4
1. Productivity Practices (PSum)	31.86	7.06	224	29.27	6.96	142	3.43	-	0.63	0.64	0.49
2. Customer Practices (CSum)	29.68	7.55	219	25.08	7.25	140	5.73	0.62	-	0.50	0.44
3. Employee Practices (ESum)	32.85	7.36	220	30.39	8.46	142	2.93	0.64	0.53	-	0.54
4. Organizational Performance	21.49	4.26	224	19.83	5.40	142	3.27	0.52	0.38	0.48	-

Note: Large organizations have ≥ 500 employees and small organizations < 500 employees. Correlations for large organizations appear below the diagonal and for small organizations above the diagonal. All correlations significant at $p < 0.001$, two-tailed. T-values > 3.00 significant at $p < 0.001$, two-tailed and t-value of 2.93 significant at $p < 0.01$, two-tailed.

Table 4
Hierarchical Regression:
Practices on Organizational Performance

Independent Variables	Organizational Performance	
	<i>Beta</i>	<i>Beta</i>
Step 1		
Sector	-0.01	-0.10
Size	0.19	0.05
Step 2		
Productivity Practices (PSum)		0.25
Customer Practices (CSum)		0.11
Employee Practices (ESum)		0.30
<i>R</i> ²	0.04	0.34
<i>F</i>	6.84	35.71
ΔR^2	-	0.30
ΔF	-	52.90
<i>DF</i>	2, 346	5, 343

Note: Organizational demographical variables entered in Step 1. Three sets of practices entered in Step 2. Categorical variables: Sector: Nonprofit/ government) = 0; for-profit = 1; Size: small (< 500 employees) = 0; large (\geq 500 employees) = 1. *Beta* > 0.29 and *F* and ΔF > 0.35 significant at $p < 0.001$, two-tailed; *F* of 6.84 significant at $p < 0.01$, two-tailed; *Beta* of -0.10 significant at $p < 0.001$, two-tailed.

Table 5
Average Organizational Performance among Five Levels of Practices and Standardized Mean Differences between Groups

Levels of Practices	N	M	SD	<i>d</i> between adjacent groups
I. (Cube 1)	82	23.28	3.31	
II. (Cubes 2-10 = Mega cube A)	205	22.55	3.80	0.20
III. (Cubes 11-17 = Mega cube B)	133	20.29	4.37	0.57
IV. (Cubes 18-26 = Mega cube C)	186	18.25	4.61	0.46
V. (Cube 27)	73	13.86	5.07	0.93

Note. The ANOVA $F(4, 674) = 78.60$, $p < 0.001$, two-tailed. The average *d* statistic between adjacent groups = 0.54. Bonferroni adjusted post hoc analysis indicated that all differences were statistically significant at $p < 0.001$, two-tailed, across all groups. The statistic for the difference in performance between Cube One and Cube 27 = 2.22.

DISCUSSION

As theorized, each of the three sets of practices was significantly associated with organizational performance, a finding that yielded consistent support for Hypotheses 1 through 3. Examined collectively using hierarchical multiple regression, only two of the practices had fully significant *Beta* weights. As predicted by Hypothesis 4, there was a large difference in organizational performance comparing Cubes One and 27, a difference that exceeded 14 standard errors. (Pertinent to the magnitude of this difference, it might be noted that the famous 6 Sigma threshold—or six standard errors—corresponds to a probability of 3.4 occurrences in one million observations, which is far more likely to occur than a difference of 14 standard errors.) Further, the pattern in organizational performance scores was entirely consistent across the five major cube categories. Mean performance levels were highest in Cube One, and declined as predicted in Megacubes A, B, and C, with the lowest performance in Cube 27; further, the overall effect size was large.

Correlations between the three predictors (PSum, ESum, and CSum) and performance ranged from 0.42 to 0.52, effect sizes that are large and medium per Cohen (1992). That the combined association was approximately 0.58 ($R^2 = .34$) suggests that all three practices are contributory to organizational performance. Yet as noted above, the *Beta* weight for customer-directed practices in the hierarchical multiple regression analysis was marginally significant ($p = 0.07$), a finding consistent with the high median intercorrelation among the practices of $r = 0.60$. The implications of the high intercorrelations are two-fold. First, the high levels of shared variance among the independent variables resulted in multicollinearity, with the explained variance being shared somewhat arbitrarily. Second, it is not surprising that there are high intercorrelations among the independent variables, as one would expect well-managed organizations to be mindful of all three sets of practices.

Pertinent to the issue of multicollinearity and the allocation of explained variance, a secondary analysis consisting of three hierarchical regressions was performed. The first step in each regression was entering one set of practices with the second step entering the other two. As shown in Table 6, all *Beta* weights dropped substantially after entering the other practices, and customer-directed practices were statistically significant without controlling for sector and organization size.

It is plausible that the scope of the present research may have contributed to the magnitude of results obtained. The practices examined encompassed multiple disciplines or fields of inquiry, including human resource management, total quality management, I/O psychology, marketing, operations management, and strategic management. Traditionally, there has been abundant research on the effects of a single technique (e.g., goal setting) on individual-level performance. Beginning about fifteen years ago, though, researchers have started to examine the effects of multiple management interventions/practices at the organizational level of analysis (for an early such study, see Delaney and Huselid, 1996). The present research builds on this line of inquiry, examining practices that go beyond HR.

Table 6
Three Sets of Hierarchical Regressions: Practices on Organizational Performance

		Dependent Variable: Organizational Performance								
		Model 1			Model 2			Model 3		
IVs	Step 1 Beta	Step 2 Beta	IVs	Step 1 Beta	Step 2 Beta	IVs	Step 1 Beta	Step 2 Beta	Step 3 Beta	
PSum	0.50	0.24	CSum	0.42	0.10	ESum	0.52	0.33	0.33	
CSum		0.10	PSum		0.24	PSum		0.24	0.24	
ESum		0.33	ESum		0.33	CSum		0.33	0.10	
R^2	0.25	0.33	R^2	0.18	0.33	R^2	0.27	0.33	0.33	
F	220.85	111.08	F	145.42	111.08	F	111.08	111.08	111.08	
ΔR^2	-	0.09	ΔR^2	-	0.15	ΔR^2	-	0.06	0.06	
ΔF	-	42.62	ΔF	-	77.48	ΔF	-	29.52	29.52	

Note: DFs for Model 1 and Model 2 = 1, 677 and 3, 675. Step 1 variance explained in Step 1 and ΔR^2 and ΔF in Step 2 differ between the three models. As Step 2 for each model includes all three independent variables, total variance explained and beta coefficients of all Step 2s are identical.

All F and ΔF and all $Beta \geq 0.24$ significant at $p < 0.001$, two-tailed; $Beta$ of 0.10 significant at $p < 0.05$, two-tailed.

Of course, 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, 1977) and Lawler's (1986; 1992) four-factor model. The present research describes a framework that is directly testable and is accompanied by instrumentation that permits classifying organizations per the Cube One framework.

Further, it might be noted that the Cube One framework does not assume that the three sets of interests and their related practices are mutually antagonistic. An organization that emphasizes efficiency can also emphasize concern for employees and customers. In contrast, some earlier theories (e.g., the competing values frameworks advanced by O'Toole (1984) and by Quinn (1988) assume that there are inescapable trade-offs between efficiency and quality of work life. Interestingly, a recent meta-analysis of empirical studies testing Quinn's competing values framework (Hartnell *et al.*, 2011: 687) concluded that the purportedly "'competing values' may be more complimentary than contradictory."

Adding a layer of complexity to the Cube One framework, it should be noted that practices may have indirect as well as direct effects. That is, in terms of the three-dimensional schematic, practices are not located exclusively on just one vector. For example, the practices implemented at Continental Airlines to improve on-time arrivals and customer satisfaction—specifically measuring and rewarding improved on-time arrival performance—also increased productivity by accelerating turnaround time, and heightened employee satisfaction by receipt of money.

A number of weaknesses to the present endeavor should be discussed. First, because all data were collected from the same source at the same point in time, there is a threat to validity due to common method variance. A few facets of the present research mitigate this threat. As noted by Podsakoff *et al.* (2003), not all types of measures and item formats are equally susceptible to this threat. In this regard, it is notable that respondents were asked to describe the frequency of observable practices, rather than the strength of their attitudes toward "vague concepts" (Podsakoff *et al.*, 2003: 888). Second, the dependent variable (organizational performance) was comprised of items each having different anchors/endpoints along with differing intermediate descriptors and using a ten-point scale; the frequencies of enactment of practices were assessed using a five-point scale. The use of differing scale formats and anchors is recommended by Podsakoff *et al.* (2003). Third, the data collection process essentially insisted on anonymity, specifically instructing potential respondents as follows: "Please do not put your name on this survey." This served to reduce evaluation apprehension. Fourth, although not reducing the threat of common method bias, two measures were included that on theoretical grounds should have been unrelated to either the predictor or criterion measures. The conceptually unrelated measures (i.e., self-efficacy and benign world view) were, in fact, found to be unrelated to any of the three sets of practices or organizational performance. Thus, response set biases are not a viable competing explanation for the present results. However, because all data were obtained from employees, this may have partly contributed to the lower predictive validity of customer-directed practices. Ideally, customers should have provided data on customer-directed practices.

A second weakness is that data for each organization were obtained from one respondent. Although this is not uncommon in multi-organizational research, it would have been preferable to have had multiple respondents from each organization. Further, because respondents and focal organizations were anonymous, it is possible that there was some duplication in companies, but, in light of the many thousands of organizations in the metropolitan New York area, we would estimate this overlap applies only to a small proportion of organizations.

Finally, the present research relied on a subjective evaluation of organizational performance. Although subjective measures of organizational performance (and effectiveness) have long been relied on, their validity remains in doubt. Research by Wall *et al.* (2004) has found that subjective measures may be construct valid. Furthermore, objective measures of organizational performance are rarely applicable to analyzing companies in different industries, no less two different sectors (for-profit and nonprofit/government).

In light of the generalizability of the present findings across sectors and organizations of different sizes, there is basis for the suggestion that the Cube One framework is encouraging for the conduct of further inquiry. The Cube One taxonomy may have practical utility for diagnosing and intervening so as to improve organizational performance.

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