

Organizational Effectiveness Inventory[®] (OEI)



The Reliability and Validity of the *Organizational Effectiveness Inventory*[®]

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WHAT IS THE OEI?

The *Organizational Effectiveness Inventory*[®] (OEI; Cooke, 1995, 1997) is a survey designed to measure attitudinal and behavioral indicators of effectiveness (e.g., teamwork, motivation, and satisfaction). It also measures the internal factors and conditions (e.g., human resource management practices, leadership, and job design) that can directly and indirectly—through an organization's culture—impact effectiveness. The OEI was developed as a companion to the *Organizational Culture Inventory*[®] (OCI[®]; Cooke & Lafferty, 1983, 1994), a survey that assesses the normative beliefs and shared behavioral expectations which may reflect the more abstract aspects of culture, such as shared assumptions and values. However, the OEI is also a valuable tool in its own right for evaluating organizational effectiveness and directing and monitoring organizational change.

This report describes the reliability of the OEI based on a sample of 6,444 members of 1,080 organizational units. Criterion-related validity is also addressed by examining the relationships between the OEI scales and the OCI measures of organizational culture.

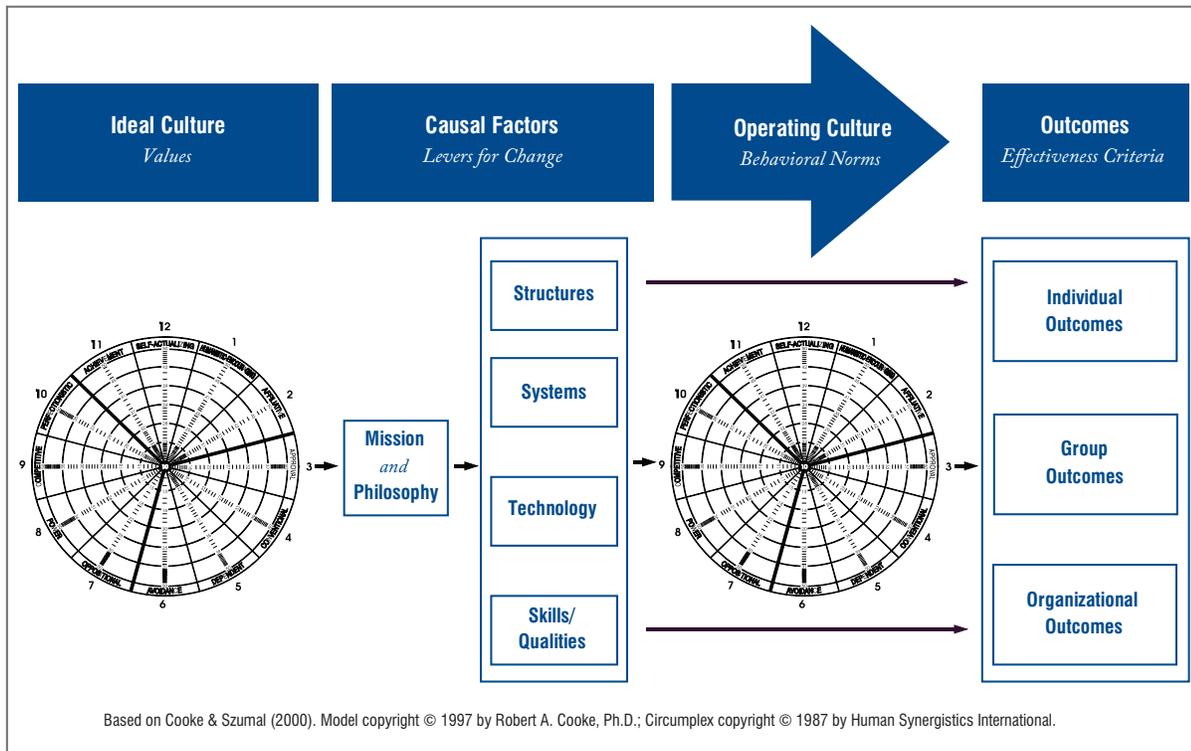
THE ORGANIZATIONAL EFFECTIVENESS INVENTORY (OEI)

The OEI was originally designed as a customized survey that organizations could administer along with the OCI. The OCI provides a picture of an organization's culture at the level of behavioral norms and expectations. The OEI, on the other hand, enables an organization to evaluate the impact of its culture on outcomes and identify the internal factors and conditions that shape and reinforce that culture. Initially, organizations were asked to select the measures they wanted included in their OEI from a database of scales from various prototypes. However, because all of the scales in the database were consistently selected, the current version of the OEI contains a standard set of questions measuring 31 causal factors and 12 outcomes, as well as a section for adding up to 40 questions of particular interest to the organization.

THE THEORETICAL MODEL

The causal factors and outcomes measured by the OEI were determined based on a review of contemporary articles and books, established theories, and classic writings in the areas of organizational culture, human resource management, organizational behavior, organization theory, and social psychology. The theoretical model presented by Cooke and Szumal (2000) and shown on the next page describes the hypothesized relationships among causal factors, culture, and outcomes.

THE THEORETICAL MODEL



As depicted by the model, causal factors affect outcomes both directly and through an organization's operating culture. The causal factors that most directly influence culture and outcomes are structures, systems, technology, and skills/qualities.

- Structures describe the manner in which system components (such as people, tasks, and roles) are ordered and coupled to create organization (Georgopoulos, 1986).
- Systems are the interrelated sets of procedures—such as human resource management, accounting, and quality control systems—an organization uses to support its core activities and solve problems.
- Technology includes the methods by which an organization transforms inputs into outputs.
- Skills/qualities refer to those demonstrated by the organization's members, including those in leadership positions.

Mission and philosophy are also important causal factors, though their impact on culture and outcomes is more indirect than that of structures, systems, technology, and skills/qualities. Mission and philosophy represent the mechanisms by which organizations explicitly communicate their values to members. A clear and well-understood mission and philosophy statement is more likely to be consistently used (in making decisions about structures, systems, technology, and skills/qualities) than one that is unclear or not understood.

To the extent that causal factors are aligned with the organization's values, the operating culture will more closely reflect the ideal culture and the organization will perform more favorably along outcomes. In contrast, when causal factors are not aligned with values (either because the organization's mission and philosophy do not explicitly communicate its values or because the mission and philosophy are not used), the operating culture will be considerably different from the ideal and the outcomes realized will be less favorable.

OEI MEASURES OF CAUSAL FACTORS

In contrast to traditional attitude surveys that focus exclusively on outcomes, the OEI includes measures of various internal factors and conditions that directly and indirectly impact outcomes. These causal factors can help to pinpoint what is driving an organization's current operating culture and effectiveness and be used to identify where modifications or changes are needed. Thirty-one causal factors are assessed by the OEI and are organized into the five categories identified by the theoretical model (i.e., mission and philosophy, structures, systems, technology, and skill/qualities). Except where noted, all of the causal factors are measured on 5-point scales that range from 1 (disagree, not at all, or not likely at all) to 5 (agree, to a very great extent, or almost certain).

Mission and philosophy. As described by others (e.g., Deal & Kennedy, 1982; Lawler, 1996; Ouchi, 1981; Tunstall, 1986), an organization's mission and philosophy can impact its culture and effectiveness. However, the extent and desirability of this impact depend on whether the mission and philosophy are clearly defined, exemplified, and understood by the organization's members. Therefore, the OEI includes two measures of mission and philosophy:

- articulation of mission (i.e., extent to which mission is clearly defined, illustrated, and understood by members) and
- customer-service focus (i.e., the extent to which members understand they are responsible for identifying and satisfying the needs of customers/clients).

Structures. Structures are an important determinant of both organizational culture and organizational effectiveness (e.g., Lawler, 1996; Peters & Waterman, 1982; Schein, 1983). Thus, the OEI includes measures of the extent to which structures promote or restrict the influence, empowerment, and involvement of the organization's members.

The measures of influence are based on the work of Tannenbaum (1968), who found that the greater the total amount of influence being exercised within an organization and the less hierarchical its distribution, the higher the levels of performance and member satisfaction. Like Tannenbaum, the OEI uses single items to assess the influence of employees, their immediate supervisors/managers, and higher-level managers over departmental decisions. Responses are based on a 5-point scale that ranges from 1 (no influence at all) to 5 (very great influence). Total influence is estimated by adding the amount of influence that is exercised by members at each organizational level (i.e., employees, their supervisors/managers, and higher-level managers). Distribution of influence is calculated by subtracting employees' influence from the influence of higher-level managers.

In addition to the influence measures, the OEI assesses structure in terms of:

- empowerment (i.e., the extent to which people are given what they need to perform their tasks autonomously) and
- employee involvement (i.e., the extent to which all members actively participate in shaping the organization and in helping it to achieve its mission).

Systems. Human resource management systems, appraisal and reinforcement systems, and goal setting systems, in particular, have been described as potentially powerful levels for promoting organizational change and improvement (e.g., Allen, 1985; Latham & Locke, 1979; Lawler, 1996; Pritchard, Jones, Roth, Stuebing, & Ekeberg, 1988; Sethia & Von Glinow, 1985; Tubbs, 1986). The OEI measures human resource management systems in terms of:

- selection/placement (i.e., the extent to which people and jobs are appropriately matched),

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- training & development (i.e., the extent to which both new and existing members are provided with training), and
- respect for members (i.e., the extent to which members are treated fairly and justly).

Aspects of appraisal and reinforcement systems that are measured by the OEI include:

- fairness of appraisals (i.e., the likelihood that evaluations will be based on performance and objective criteria),
- use of rewards (i.e., the likelihood that good performance will be noticed and reinforced in positive ways), and
- use of punishment (i.e., the likelihood that mistakes will be accentuated and punished).

The OEI assesses goal setting systems in terms of the characteristics of the goals toward which people work on their jobs. The characteristics evaluated are based primarily on the work of Latham and Locke (1978) and are each measured by a single item on a 3-point ordinal scale with endpoints that vary with the characteristic assessed. The characteristics assessed include:

- goal clarity (i.e., the extent to which goals are clear and specific versus unclear and ambiguous),
- goal challenge (i.e., the extent to which goals are fairly challenging rather than too easy or too difficult),
- participative goal setting (i.e., the extent to which goals are jointly set by members and superiors rather than set unilaterally by either party), and
- goal acceptance (i.e., the extent to which goals are fully accepted versus marginally accepted by members).

Technology. The OEI measures of technology are based primarily on the work of Hackman and Oldham (1980), who, among others (e.g., Lawler, 1996; Trist & Bamforth, 1951), have described how the design of jobs can shape behavioral norms and expectations and, in turn, have implications for the motivation, performance, and satisfaction of job holders. The OEI assesses technology in terms of:

- autonomy (i.e., the degree to which jobs provide members with discretion in terms of scheduling and work procedures),
- skill variety (i.e., the degree to which jobs require members to use a wide range of skills and competencies),
- feedback (i.e., the degree to which carrying out their jobs provides members with information about their performance),
- task identity (i.e., the degree to which jobs enable members to carry out a complete and identifiable task from beginning to end),
- significance (i.e., the degree to which jobs are viewed by members as having an important impact on other people), and
- interdependence (i.e., the degree to which members must cooperate and work with others in order to carry out their jobs).

Skills/Qualities. The skills and qualities of members—particularly those in leadership positions—can shape, reinforce, and change the operating culture of an organization and influence its effectiveness (e.g., Lawler, 1996; Peters & Waterman, 1982; Schein, 1983). The OEI measures of skills/qualities focus on communication, leadership styles, and supervisory/managerial sources of power.

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The quality of organizational communications is measured by three sets of bi-polar adjectives. For each pair of adjectives, respondents indicate on a 5-point continuum the relative extent to which each word describes one of the following dimensions of communication within their organization:

- upward communication (i.e., the effectiveness with which information is sent from employees to people in higher-level positions),
- downward communication (i.e., the effectiveness with which information about the organization is sent to employees), or
- communication for learning (i.e., the degree to which communications reflect a systems orientation and emphasis on learning).

Four different styles of leadership are assessed by the OEI, based on the research of Bowers and Seashore (1966). These styles include:

- interaction facilitation (i.e., the extent to which managers encourage their direct reports to work as a team),
- task facilitation (i.e., the extent to which managers help their direct reports to solve problems and implement better procedures),
- goal emphasis (i.e., the extent to which managers reinforce expectations for excellence), and
- consideration (i.e., the extent to which managers are personally supportive of their direct reports).

Finally, based on the work of French and Raven (1959), the OEI measures two different “bases” or sources of power that supervisors and managers might rely on to influence the behavior of their employees:

- personal bases of power (i.e., the extent to which employees are influenced by their supervisor’s/manager’s technical expertise or competence, the respect that they have for their supervisor/manager, and their supervisor’s/manager’s willingness to be influenced by them) and
- organizational bases of power (i.e., the extent to which employees are influenced because of their supervisor’s/manager’s control over desirable extrinsic outcomes, formal position, and ability to punish those who fail to comply).

OEI MEASURES OF OUTCOMES

Twelve outcomes are measured by the OEI and are organized into four categories: individual outcomes—positive indices, individual outcomes—negative indices, group outcomes, and organizational outcomes. All of the outcomes are measured on 5-point scales that range from 1 (disagree or not at all) to 5 (agree or to a very great extent).

Individual outcomes—positive indices. The positive attitudes and sentiments that individuals hold toward their jobs or organizations have been used as criteria of organizational effectiveness (e.g., Friedlander & Pickle, 1968; Hitt, 1988; Kaplan & Norton, 1996; Kreitner & Kinicki, 1998; Lawler, 1996; Pennings, 1975; Seashore, 1965) and have been identified as outcomes of organizational culture (e.g., Cooke & Szumal, 1993, 2000; O’Reilly, 1989). The positive individual outcomes measured by the OEI include:

- role clarity (i.e., the extent to which members receive clear messages regarding expectations),
- motivation (i.e., the extent to which members are inspired to behave in ways consistent with organizational goals),

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- satisfaction (i.e., the extent to which members feel positively about their work situation), and
- intention to stay (i.e., the extent to which members plan to remain with their current organization).

Individual outcomes—negative indices. The extent to which members experience excessive or conflicting demands or pressures (stressors) and psychological reactions to such demands and pressures (stress or strain) have been described as indicators of organizational ineffectiveness (e.g., Georgopolous & Tannenbaum, 1957; Kreitner & Kinicki, 1998; Penning, 1975) and as outcomes of an organization's operating culture and behavioral norms (e.g., Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964; Katz & Kahn, 1966; van der Velde & Class, 1995). The OEI measures three types of negative individual outcomes:

- role conflict (i.e., the extent to which members receive inconsistent messages from the organization and are expected to do things that conflict with their own preferences),
- job insecurity (i.e., the extent to which members are apprehensive about their continued employment with the organization), and
- stress (i.e., the extent to which members feel they are pushed beyond their normal range of comfort by organizational demands, pressures, or conflicts).

Group Outcomes. Group-level outcomes such as teamwork have been used as indicators of organizational effectiveness (e.g., Cunningham, 1977; Georgopolous & Tannenbaum, 1957; Kaplan & Norton, 1996) and have been proposed to be outcomes of organizational culture and behavioral norms (e.g., Cooke & Szumal, 1993, 2000; Hackman & Oldham, 1980; Ouchi, 1981). The OEI measures three types of group-level outcomes:

- intra-unit cooperation (i.e., cooperation within groups),
- inter-unit coordination (i.e., coordination between groups), and
- departmental-level quality (i.e., the quality of work performed by one's own department).

Organizational outcomes. Quality of service is commonly used as an indicator of organizational effectiveness (e.g., Cunningham, 1977; Friedlander & Pickle, 1968; Hitt, 1988; Kreitner & Kinicki, 1998; Seashore, 1965) and has been identified as an outcome of organizational culture and behavioral norms (e.g., Band, 1991; Cooke & Szumal, 2000; Jablonski, 1990; Klein, 1992; Zeithaml, Parasuraman, and Berry, 1990). Similarly, an organization's ability to successfully adapt to changes in its external environment has been used as an indicator of organizational effectiveness and has been proposed to be an outcome of culture (e.g., Kotter & Heskett, 1992; Peters & Waterman, 1983). Thus, the OEI includes two measures of organizational-level outcomes:

- organizational-level quality (i.e., the extent to which members believe the organization provides high quality products and services to external clients) and
- external adaptability (i.e., the extent to which the organization effectively recognizes and responds to changes in its external environment).

METHOD

Sample

The reliability and validity of the OEI scales were examined with a sample of 6,444 members of 1,080 organizational units that were randomly selected to participate in a project directed by Dr. Robert A. Cooke that included completing both the OCI and OEI primarily for research purposes. An organizational unit is defined here as a group of people

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who work under the same manager or supervisor. For most of the organizational units, a sample of 4 to 6 members were asked to complete both the OCI and the OEI.

Procedure

Data collection on various prototype versions of the OEI began over a decade ago and remains ongoing with the current marketed version. Although there is considerable overlap in the different OEI prototypes and versions, there are also some differences. Due to concerns regarding survey length, some prototype versions included measures of outcomes or causal factors that were not included in other versions. In addition, some scales were modified over time to enhance their reliability and validity or to reduce the overall length of the survey. The analyses reported here focus on the scales included in the current marketed version of the OEI.

Analyses

Means and standard deviations were computed for all of the OEI scales. Scores for multiple-item scales are based on the mean of the responses to the items included in the scales. Responses to OEI items that are worded in terms of the opposite extreme of the scales that they measure were reversed before computing scale scores and conducting internal consistency analyses.

Internal consistency. Thirty-seven of the 43 OEI scales consist of multiple items. The internal consistency of these scales was estimated using Cronbach's alpha. Cronbach's alpha represents the average correlation among all items included in a given scale and provides an estimate of the extent to which the observed score for a particular scale is representative of the "true" score for that measure (i.e., a score that does not contain any measurement error). Alphas that are too high (i.e., close to 1.00) suggest that the scale may be too narrow in focus and the items too similar to make a unique contribution. Alphas that are too low (i.e., close to 0.00) suggest that the items may be covering too broad a domain, are measuring different constructs, or are ambiguous in their meaning. Alpha coefficients between .70 and .80 are generally considered to be ideal and provide strong support for the stability of the scale scores.

Inter-rater reliability. Inter-rater reliability was tested by conducting a series of one-way analyses of variance (ANOVA) with organizational unit as the independent variable and the OEI outcomes and causal factors as the dependent variables. The F statistics from the ANOVAs were used to determine whether the variance in responses of members from different organizational units were significantly greater than the variance in responses of members from the same unit. Significant F statistics provide support for inter-rater consistency and the aggregation of respondents' OEI scores to the unit- or organizational-level. The eta² statistics from the ANOVAs are also reported as they provide an estimate of the percentage of variance in respondents' OEI scores that is explained by unit membership.

Demonstration of inter-rater consistency is particularly important for OEI measures of unit- or organizational-level phenomena (i.e., mission and philosophy, structures, human resource management, appraisal and reinforcement, skills/qualities, and group and organizational outcomes). Unlike the measures of individual- or job-level phenomena (i.e., goal setting, technology, and individual outcomes), the variance in reports of group- and organizational-level phenomena by members of the same unit is more likely due to error than true variance. In turn, the inter-rater reliability results provide an indication of the stability of unit or organizational averages along particular measures.

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Criterion-related validity. Since it is presumed that the causal factors and outcomes measured by the OEI are related to organizational culture, correlational analyses were carried out between the OEI scales and the OCI measures of culture. The OCI measures 12 sets of behavioral norms and expectations associated with three general types of cultures (Cooke, 1989, pp. 12-13):

- Constructive cultures, in which members are encouraged to interact with others and approach tasks in ways that will help them to meet their higher-order satisfaction needs (include Achievement, Self-Actualizing, Humanistic-Encouraging, and Affiliative norms).
- Passive/Defensive cultures, in which members believe they must interact with people in a way that will not threaten their own security (include Approval, Conventional, Dependent, and Avoidance norms).
- Aggressive/Defensive cultures, in which members are expected to approach tasks in forceful ways to protect their status and security (include Oppositional, Power, Competitive, and Perfectionistic norms).

Previous studies based on the OCI suggest the relationships to be expected between the OCI and OEI measures (e.g., Cooke & Szumal, 1993, 2000; Klein, 1992; Klein, Masi, & Weidner, 1995; Kosmoski-Goepfert, 1994; Szumal, 1998, van der Velde & Class, 1995). On the causal factor side, all of the OEI measures, with the exception of distribution of influence, use of punishment, and organizational sources of power, should be positively related to Constructive cultures and negatively related to Passive/Defensive and Aggressive/Defensive cultures. Distribution of influence, use of punishment, and organizational sources of power all work against motivation, satisfaction, and high performance and therefore should be negatively related to Constructive cultures and positively related to both types of defensive cultures.

OEI measures of desirable outcomes (i.e., individual outcomes—positive indices, group outcomes, and organizational outcomes) should be positively related to the OCI's Constructive cultures and negatively related to Passive/Defensive and, to a lesser degree, Aggressive/Defensive cultures. In contrast, the negative individual outcomes (role conflict, job insecurity, and stress) should be negatively related to Constructive cultures and positively related to Passive/Defensive and Aggressive/Defensive cultures.

To test the criterion-related validity of the OEI, respondents' OEI and OCI scale scores were aggregated to the unit-level by computing the means for each unit. For the OCI, unit-level means along each of the 12 styles were converted to percentile scores and then the average percentile scores for the Constructive, Passive/Defensive, and Aggressive/Defensive clusters were computed. Zero-order correlations were then carried out between the aggregated OEI and OCI scores. Evidence of criterion-related validity is provided by correlations that are significant and in the expected direction.

RESULTS AND INTERPRETATION

Reliability of the Causal Factor Measures

Mission and philosophy. The reliability results for the mission and philosophy scales are reported in Table 1 on the next page. Both scales demonstrate acceptable levels of internal consistency and inter-rater reliability. The alpha coefficients (.76 for articulation of mission and .72 for customer-service focus) are within the ideal range. In addition, the F statistics suggest that a significant amount of variance in respondents' mission and philosophy scores are explained by their unit membership ($p < .001$ and $\eta^2 = .34$ for both scales). Taken together, these results provide support for the stability of the OEI mission and philosophy measures.

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Table 1: Reliability of the Mission and Philosophy Measures

	<i>n</i>	<i>M</i>	<i>SD</i>	<i>alpha</i>	<i>F</i>	<i>eta</i> ²
Articulation of Mission^a	2743	3.53	0.92	.76	3.87***	.34
Objectives/priorities are clear and understood by members						
People have a clear understanding of mission and role						
Widely-shared philosophy provides employees an understanding						
Ceremonies are held to celebrate outstanding work						
Members' actions illustrate philosophy and priorities						
Customer-Service Focus^b	2046	3.63	0.82	.72	3.20***	.34
Your department is responsible for client satisfaction						
You are encouraged to emphasize the perspective and needs of customers						
You are relied on to provide information about customers						
Your organization relies on you to help win customers and generate sales						
The organization responds effectively to changing needs of clients ^c						

Note. Scales are in **boldface** and are shaded. Item are listed below scales.

^aScores for articulation of mission can range from 1 (*disagree*) to 5 (*agree*).

^bScores for customer-service focus can range from 1 (*not at all*) to 5 (*to a very great extent*). Alpha=.75, *F*=3.63***, and *eta*²=.33 when the OCI item measuring customer-service focus is not included in the scale.

^cOCI item.

p*<.05. *p*<.01. ****p*<.001.

Structures. Table 2 shows the results of the reliability analyses carried out on the OEI measures of structure. The internal consistency of both the employee involvement and empowerment scales are acceptable, though the coefficient for empowerment scale is slightly below the ideal range. (Alpha coefficients for the influence measures are not appropriate since the items used to construct these measures each assess influence at a different organizational level.)

The *F* statistics for total influence, distribution of influence, empowerment, and employee involvement indicate that the variance in the reports of respondents from different units is significantly greater (at *p*<.001) than the variance in the reports of respondents from the same unit. The *eta*² statistics show that approximately 24 to 32 percent of the variance in respondents' descriptions of organizational structures is explained by their unit membership. Thus, the ANOVA results demonstrate the inter-rater reliability of the OEI structure scales and provide support for aggregating respondents' structure scores to the unit- or organizational-levels.

Table 2: Reliability of the Structure Measures

	<i>n</i>	<i>M</i>	<i>SD</i>	<i>alpha</i>	<i>F</i>	<i>eta</i> ²
Total Influence^a	6300	3.65	0.67		1.85***	.28
Distribution of Influence^b	6315	1.19	1.45		2.14***	.31
The employees						
Their immediate supervisors/managers						
Higher-level managers						
Empowerment^c	2461	3.27	0.88	.60	2.41***	.24
I have the authority and influence needed to carry out my responsibilities						
I am expected to do things without the necessary resources ^d						
I am asked to perform only those tasks for which I am trained						
When asked to do something new, I am provided with time to practice						
Employee Involvement^c	2769	3.61	1.01	0.75	3.55***	.32
Management is interested in employees' suggestions						
Employees are actively involved in improving organization						
There's little chance of getting anything done about ideas ^d						

Note. Scales are in **boldface** and are shaded. Item are listed below scales.

^aTotal influence is based on the average of the influence exercised by each level and can range from 1 (*no influence at all*) to 5 (*very great influence*).

^bDistribution of influence is based on the difference between the influence of higher-level managers and the employees and can range from -4.0 to 4.0.

^cScores for empowerment and employee involvement can range from 1 (*disagree*) to 5 (*agree*).

^dReversed item.

p*<.05. *p*<.01. ****p*<.001.

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Systems. The reliability results for the OEI measures of systems are presented in Table 3. The alpha coefficients for the human resource management and appraisal and reinforcement scales are all within the ideal range and therefore provide support for their internal consistency. (Since each of the goal-setting scales consists of one item, only their inter-rater reliability could be examined.) Based on the ANOVA results, all of the OEI measures of systems demonstrate acceptable levels of inter-rater reliability (with approximately 23 to 32 percent of the variance in respondents' scale scores explained by their unit membership). In turn, these results provide justification for aggregating respondents' scores to the unit- or organizational-levels.

Table 3: Reliability of the Systems Measures

	<i>n</i>	<i>M</i>	<i>SD</i>	<i>alpha</i>	<i>eta²</i>	
Selection/Placement^a	2466	3.38	1.02	.75	3.13***	.30
Careful to hire people who will be comfortable with job						
When a position needs to be filled, the best person gets it						
There is a good match between the requirements of jobs and the skills						
Training & Development^a	2750	3.39	0.97	.72	3.54***	.32
People receive the orientation and training they need						
When people do not perform, action is taken to help them						
Organization shows little interest in growth of its people ^b						
Opportunities for training are fair and equitable						
Respect for Members^a	2462	3.72	1.05	.79	3.23***	.30
Decisions are made to respect the rights of individual members						
People are treated well -- regardless of ethnicity, sex, age						
Members are treated with respect and dignity						
Fairness of Appraisals^a	3165	3.76	1.00	.86	2.82***	.30
...will be evaluated fairly (without regard to race, etc.)						
...will be based on real measures of performance						
...will be based on performance rather than on favoritism						
Use of Rewards^a	2730	3.25	0.97	.84	3.14***	.30
...your supervisor(s) will notice your good work						
...you will get a bigger raise or bonus						
...you will be praised						
...nothing will happen ^b						
Use of Punishment^a	2738	2.21	0.80	.73	2.22***	.23
...your supervisor(s) will openly criticize you						
...you will be given less desirable tasks to do						
...you will be punished in some other way						
...your supervisor(s) will help you to correct the problem ^b						
Goal Clarity^a	5793	1.55	0.60		1.95***	.29
Goal Difficulty^a	5715	2.05	0.34		1.86***	.28
Participative Goal Setting^d	5732	1.80	0.54		1.91***	.28
Goal Acceptance^d	4045	1.69	0.59		1.89***	.26
^a Scales are in boldface and are shaded. Items are listed below scales. Scale scores can range from 1 (<i>disagree</i>) to 5 (<i>agree</i>).						
^b Reversed item.						
^c Scales are in boldface and are shaded. Items are listed below scales. Scale scores can range from 1 (<i>not likely at all</i>) to 5 (<i>almost certain</i>).						

Technology. The reliability results for the OEI technology scales are reported in Table 4. The internal consistency of the autonomy, variety, feedback, task identity, and significance scales are acceptable, but most are slightly below the ideal range (alphas range from .62 for the task identity scale to .70 for the variety scale). These moderately low coefficients were expected for two reasons. First, because so many job characteristics were being measured, an effort was made to measure each with as few items as possible. (The likelihood of achieving high alpha coefficients decreases as the number of items per scale decreases.) Second, to reduce the creation of response sets, negatively worded items were included in a number of these measures. (Reversed items suppress alpha coefficients but enhance the overall quality of the measures by ensuring that respondents do not systematically and indiscriminately select high or low responses without regard to the content of the questions.)

Even though the scales focus on technology at the job-level, the results of the one-way ANOVAs indicate a reasonable level of consistency in the reports of members within the same unit. Approximately 19 to 36 percent of the variance in respondents' reports of technology is explained by their unit membership. Taken together, the internal consistency and inter-rater reliability results provide reasonable support for stability of the OEI technology measures.

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Table 4: Reliability of the Technology Measures

	<i>n</i>	<i>M</i>	<i>SD</i>	<i>alpha</i>	<i>F</i>	<i>eta</i> ²
Autonomy	4946	4.18	0.97	.67	3.03***	.36
It is my responsibility to decide how my job gets done						
I am allowed to plan how my work is carried out						
Variety	4947	4.31	0.94	.70	2.89***	.35
I get to do a lot of different things on my job						
My job requires that I use a variety of different skills						
Feedback	2454	3.94	0.85	.65	1.73***	.19
Just doing the work required by my job provides feedback						
I can see how well I'm doing even if no one tells me						
The design of my job makes it difficult to monitor my performance ^a						
Task Identity	2455	3.83	0.95	.62	2.02***	.21
My job involves performing a complete service						
My job allows me to do a "whole piece" of work						
My job limits me to only a small fragment of some larger task ^a						
Significance	2459	4.28	0.77	.65	2.01***	.21
A lot of people can be affected by how well I do my work						
My job has a significant impact on the work/lives of others						
Poor performance on my part would have little or no impact on others ^a						
Interdependence	3438	4.22	1.15		1.93***	.23
My job is basically a "one person show" ^a						

Note. Scale are in **boldface** and are shaded. Items are listed below scales. Scale scores can range from 1 (*disagree*) to 5 (*agree*).

^aReversed item.

p*<.05. *p*<.01. ****p*<.001.

Table 5: Reliability of the Skills/Qualities Measures

	<i>n</i>	<i>M</i>	<i>SD</i>	<i>alpha</i>	<i>F</i>	<i>eta</i> ²
Downward Communication^a	2691	3.24	0.76	.85	3.27***	.31
Timely (not Delayed)						
Complete (not Sketchy)						
Straight from the source (not Through too many channels)						
Credible (not Questionable)						
In-Depth (not Superficial)						
Through formal channels (not Through the "grapevine")						
Anticipated and understood (not Unexpected and surprising)						
Consistent and confirmatory (not Changing and confusing)						
Easily processed (not Information overload)						
Upward Communication^a	2645	3.20	0.73	.86	2.64***	.27
Forthright (not Censored)						
Provided voluntarily (not Provided only when demanded)						
Whatever needs to be said (not Only what they want to hear)						
Positive--suggestions (not Negative--complaints)						
Honest and complete (not Filtered and distorted)						
How we can make things work(not "Why things won't work")						
Accepted (not Rejected)						
Understood (not Misinterpreted)						
Acted On (not Ignored)						
Communication for Learning^a	2366	2.99	0.71	.71	2.72***	.28
Emphasizes the big picture (not Emphasizes micro-management)						
To promote discussion (not To communicate decisions)						
How do we learn from mistakes (not Who do we blame for mistakes)						
Reflects a team perspective (not Reflects individual viewpoints)						
Focused on the organization (not On units/departments)						
Concerned with interdependencies (not Concerned with isolated jobs-tasks)						
Interaction Facilitation^a	3997	3.69	1.01	.75	3.44***	.37
...encourages people to work as a team						
...holds group meetings with you and your co-workers						
...encourages members of your workgroup to exchange ideas						
Task Facilitation^a	3995	3.42	1.07	.84	2.80***	.32
...offers ideas to help you solve work-related problems						
...helps you plan your work						
...shows you how to improve your work						
Goal Emphasis^a	3993	3.98	0.95	.82	2.81***	.32
...sets an example by working hard						
...maintains high standards of performance						
...encourages people to give their best effort						
Consideration^a	3396	3.93	1.01	.86	2.59***	.29
...pays attention to your opinions						
...willingly listens to your problems						
...is friendly and easy to approach						
Personal Bases of Power^a	4169	3.68	0.92	.80	2.80***	.33
...knows what has to be done to reach our objectives						
...takes into consideration my own requests/suggestions						
...is the kind of person whose approval I value						
Organizational Bases of Power^a	3419	3.51	0.99	.65	1.71***	.21
...can influence how much money I make						
...has the formal authority to make decisions						
...could make things difficult for me if he/she wanted to						

Note. Scales are in **boldface** and are shaded. Items are listed below scales.

^aScale scores range from 1 (less effective communication) to 5 (more effective communication).

^bScale scores can range from 1 (*not at all*) to 5 (*a very great extent*).

p*<.05. *p*<.01. ****p*<.001.

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Skills/Qualities. The reliability results for the OEI measures of skills/qualities are shown in Table 5 (on previous page). All of the scales demonstrate reasonable levels of both internal consistency and inter-rater reliability. Alpha coefficients range from .65 for the organizational bases of power scale to .86 for the upward communication and consideration scales. (Note that the organizational bases of power scale as well as the personal bases scale are abbreviated versions of lengthier scales with higher reliability coefficients.) The F statistics are all significant and the eta²s indicate that approximately 21 to 37 percent of the variance in respondents' descriptions is explained by their unit membership.

Criterion-Related Validity of the Causal Factor Measures

The criterion-related validity of the OEI measures of causal factors with respect to organizational culture is demonstrated by the correlations presented in Table 6. As expected, all of the causal factors except distribution of influence, use of punishment, and organizational bases of power are positively related to Constructive cultures, negatively related to Passive/Defensive cultures, and, in most cases, negatively related to Aggressive/Defensive cultures. Also consistent with expectations, distribution of influence and use of punishment are positively related to both types of Defensive cultures and are negatively related to Constructive cultures. Organizational bases of power are negatively related to both types of Defensive cultures, as predicted; however, organizational bases of power are not significantly correlated with Constructive cultures. Overall, the correlations provide fairly strong support for the criterion-related validity of the OEI causal factor measures.

Table 6: Criterion-Related Validity of OEI Causal Factor Measures

OEI Causal Factor Measures	OCI Culture Measures		
	Constructive	Passive/Defensive	Aggressive/Defensive
Mission and Philosophy			
Articulation of Mission (<i>n</i> =321)	.66***	-.42***	-.23***
Customer-Service Focus (<i>n</i> =287)	.54***	-.20**	.02
Structures			
Total Influence (<i>n</i> =1077)	.43***	-.16***	-.06*
Distribution of Influence (<i>n</i> =1077)	-.19***	.19***	.14***
Empowerment (<i>n</i> =292)	.44***	-.31***	-.24***
Employee Involvement (<i>n</i> =321)	.61***	-.63***	-.37***
Systems			
Selection/Placement (<i>n</i> =292)	.57***	-.46***	-.31***
Training & Development (<i>n</i> =321)	.67***	-.44***	-.24***
Respect for Members (<i>n</i> =292)	.60***	-.60***	-.45***
Fairness of Appraisals (<i>n</i> =416)	.53***	-.41***	-.22***
Use of Rewards (<i>n</i> =321)	.51***	-.42***	-.22***
Use of Punishment (<i>n</i> =321)	-.42***	.56***	.56***
Goal Clarity ^a (<i>n</i> =983)	.27***	-.11**	-.06*
Goal Difficulty ^a (<i>n</i> =983)	.19***	-.20***	-.09**
Participation in Goal Setting ^a (<i>n</i> =982)	.30***	-.30***	-.20***
Goal Acceptance ^a (<i>n</i> =624)	.29***	-.28***	-.25***
Technology			
Autonomy (<i>n</i> =775)	.25***	-.35***	-.21***
Variety (<i>n</i> =775)	.31***	-.24***	-.14***
Feedback (<i>n</i> =292)	.28***	-.30***	-.22***
Task Identity (<i>n</i> =292)	.28***	-.25***	-.17***
Significance (<i>n</i> =292)	.20**	-.25***	-.16**
Interdependence (<i>n</i> =465)	.17***	-.13**	-.08
Skills/Qualities			
Downward Communication (<i>n</i> =321)	.56***	-.47***	-.30***
Upward Communication (<i>n</i> =321)	.57***	-.54***	-.38***
Communication for Learning (<i>n</i> =292)	.58***	-.49***	-.34***
Interaction Facilitation (<i>n</i> =574)	.51***	-.26***	-.10*
Task Facilitation (<i>n</i> =574)	.47***	-.14***	-.05
Goal Emphasis (<i>n</i> =574)	.53***	-.27***	-.13**
Consideration (<i>n</i> =464)	.48***	-.30***	-.25***
Personal Bases of Power (<i>n</i> =624)	.51***	-.31***	-.20***
Organizational Bases of Power (<i>n</i> =465)	.03	.14**	.27***

Note. Zero-order correlations are presented based on analyses carried out at the unit-level. The number of units on which particular correlations are based is indicated next to the causal factor scales.

^aThese measures reflect the percentage of respondents within each unit who endorsed the most desirable option (e.g., *clear and specific*, *fairly challenging*, *jointly set by you and your superiors*, and *fully accepted by you*) for a particular goal-setting item.

p* < .05. *p* < .01. ****p* < .001.

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Reliability of the Outcome Measures

Table 7 summarizes the results of the reliability analyses carried out on the OEI outcome measures. All of the scales demonstrate acceptable levels of internal consistency and inter-rater reliability, as indicated by the alpha, F, and eta² statistics. Alphas for the outcome measures range from .69 (for inter-unit teamwork and cooperation) to .82 (for satisfaction, department-level quality, and organizational-level quality). All of the F statistics are significant at $p < .001$, indicating that a significant amount of the variance in the reports of members is explained by their unit membership. The eta² statistics further indicate that 22 to 38 percent of the variance in the outcome scales is explained by unit membership. Taken together, these results provide support for the internal consistency and inter-rater reliability of the OEI outcome measures.

Table 7: Reliability of the OEI Outcome Measures

	<i>n</i>	<i>M</i>	<i>SD</i>	alpha	<i>F</i>	eta ²
Individual Outcomes--Positive Indices^a						
Role Clarity	2403	4.13	0.77	.74	2.19***	.25
You clearly know what's required of you to "fit in" You know exactly what is expected of you You are uncertain about how you're supposed to "act" ^b You clearly know what is expected of you ^c						
Motivation	2134	4.01	0.82	.73	2.86***	.31
Your department motivates you to do the highest quality work possible It seems pointless to work hard given the way your department is run ^b Your department inspires the very best in you You would personally go out of your way to make sure a customer feels good ^c						
Satisfaction	2370	3.81	0.90	.82	2.58***	.29
You are satisfied with your present situation in your department In general, you like working here You are satisfied being a member of this organization ^c You would recommend this organization as a good place to work ^c						
Intention to Stay	3025	3.59	1.25	.76	2.86***	.34
You will probably look for a new job in the next year ^b You expect to be with this organization two years from now ^c						
Individual Outcomes--Negative Indices						
Role Conflict^a	2081	2.40	0.82	.75	2.23***	.27
You have to change the way you think and behave when you arrive at work You receive incompatible requests from two or more people Different people send you "different messages" You feel you comfortably fit in as a member of this organization ^{bc} Your job requires you to think and behave differently than would otherwise ^c You receive inconsistent messages regarding what is expected ^c						
Job Insecurity	3503	2.24	1.18	.74	3.24***	.34
You worry about being laid off and having to find a new job Your job is secure ^b						
Stress	4169	2.84	1.05	.79	2.21***	.28
You feel relaxed (not tense and under pressure) at work ^b Your job situation tends to be frustrating You feel good when you're on the job ^c You find your job stressful						
Group Outcomes						
Intra-Unit Teamwork and Cooperation	2755	3.86	0.91	.69	2.18***	.22
The people you work with are helpful to you The people you work with compete (rather than cooperate) ^b You can count on your co-workers when teamwork is needed						
Inter-Unit Coordination	2449	3.04	0.91	.72	3.12***	.30
Excellent cooperation between interdependent work groups Practices of some units cause problems for others ^b Services provided by other departments are of high quality Your workgroup can rely on other departments						
Departmental-Level Quality	2736	4.14	0.85	.82	3.28***	.30
Services provided by your department are of the highest quality possible You can take pride in the quality of your department's work Customers would choose to do business with your department again						
Organizational Outcomes						
Organizational-Level Quality^a	2038	3.83	0.71	.82	3.82***	.38
The quality of your organization's products/services meets customer expectations The quality of products/services is inconsistent -- subject to variability ^b You would choose to do business with your organization (if you were in the market) Your organization has a reputation for superior customer service ^c Your organization will get repeat business from its present customers ^c You would recommend this organization to potential customers ^c						
External Adaptability	2402	3.45	0.97	.75	3.05***	.29
New programs are quickly and efficiently implemented This organization proactively identifies and adjusts to changes This organization responds effectively to external opportunities and threats						

Note. Scales are in **boldface** and are shaded. Items are listed below scales. Scale scores can range from 1 (disagree or not at all) to 5 (agree or to a very great extent).

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Criterion-Related Validity of the Outcome Measures

The results of the correlational analyses carried out between the OEI outcome scales and the three OCI measures of culture are shown in Table 8. It was hypothesized that the desirable OEI outcome measures would be positively related to Constructive cultures and negatively related to Passive/Defensive and Aggressive/Defensive cultures. Consistent with this prediction, the individual outcomes—positive indices, group outcomes, and organizational outcomes are all positively related to Constructive cultures and are all negatively related to both Passive/Defensive and Aggressive/Defensive cultures.

The undesirable outcomes measured by the OEI (i.e., role conflict, job insecurity, and stress) were predicted to be negatively related to Constructive cultures and positively related to Passive/Defensive and Aggressive/Defensive cultures. As shown in Table 8, these outcomes are all negatively related to Constructive cultures and are positively related to both Passive/Defensive and Aggressive/Defensive cultures. Thus, the results of the correlational analyses provide support for the criterion-related validity of the OEI outcome measures.

Table 8: **Criterion-Related Validity of OEI Outcome Measures**

OEI Outcome Measures	OCI Culture Measures		
	Constructive	Passive/Defensive	Aggressive/Defensive
Individual Outcomes--Positive Indices			
Role Clarity (<i>n</i> =320)	.55***	-.43***	-.31***
Motivation (<i>n</i> =291)	.61***	-.48***	-.29***
Satisfaction (<i>n</i> =320)	.64***	-.51***	-.35***
Intention to Stay (<i>n</i> =463)	.36***	-.31***	-.18***
Individual Outcomes--Negative Indices			
Role Conflict (<i>n</i> =291)	-.46***	.61***	.53***
Job Insecurity (<i>n</i> =480)	-.27***	.21***	.18***
Stress (<i>n</i> =624)	-.29***	.29***	.33***
Group Outcomes			
Intra-Unit Teamwork and Cooperation (<i>n</i> =321)	.36***	-.50***	-.48***
Inter-Unit Coordination (<i>n</i> =292)	.49***	-.33***	-.21***
Departmental-Level Quality (<i>n</i> =321)	.50***	-.37***	-.21***
Organizational Outcomes			
Organizational-Level Quality (<i>n</i> =287)	.50***	-.33***	-.12*
External Adaptability (<i>n</i> =288)	.55***	-.34***	-.14*

Note. Zero-order correlations are presented based on analyses carried out at the unit-level. The number of units on which particular correlations are based is specified next to the outcome scales.

* $p < .05$. ** $p < .01$. *** $p < .001$.

IMPLICATIONS

The OEI is a diagnostic tool used to assess behavioral and attitudinal outcomes associated with organizational effectiveness and the internal factors and conditions that drive organizational culture and influence effectiveness. Internal consistency analyses provide support for the stability of OEI scale scores based on multiple-items. Similarly, the results of the ANOVAs demonstrate the stability of the OEI measures among raters who work within the same organizational unit. In addition, the correlations between the OEI and OCI measures demonstrate the validity of the OEI with respect to measuring outcomes and causal factors related to culture. Taken together, these findings have implications for both reporting OEI results and further strengthening some of the OEI measures.

Organizational Effectiveness Inventory®**Reporting OEI Results**

All of the multiple-item scales included in the OEI demonstrated reasonable—and, in many cases, ideal—levels of internal consistency. Thus, while results for individual items should be examined to provide a deeper understanding of the scale, the results for the scale as a whole provides a more stable measure of the particular outcome or causal factor.

Demonstration of inter-rater reliability is critical to establishing the psychometric adequacy of scales purported to measure unit-level or organizational-level phenomena. Responses to all of the OEI scales measuring organizational-level phenomena (i.e., the measures of mission and philosophy, structures, human resource management, quality of communication, and organizational outcomes) were found to be significantly more consistent within units than they were between units. Similarly, responses to scales measuring unit-level phenomena (i.e., measures of appraisal and reinforcement, supervisory/managerial leadership, supervisory/managerial bases of power, and group outcomes) were all found to be significantly more consistent within units than between units. In turn, these results suggest that OEI scores based on unit or organizational averages are both meaningful and appropriate.

Although demonstration of inter-rater reliability is not critical for the measures of individual-level phenomena, the responses to many of the individual-level OEI scales showed significant levels of consistency within organizational units. The responses to all of the measures of goal setting, technology, and individual outcomes showed significantly greater consistency within units than between units or organizations. These results are expected given that respondents within the same unit tended to hold similar types of jobs. Subsequently, aggregated results along these measures are likely to be stable and meaningful, particularly when respondents hold similar types of jobs or carry out similar types of tasks.

Strengthening the OEI

The reliability results also provide direction in terms of strengthening particular measures. For example, the alpha coefficients for the empowerment, feedback, task identify, significance, and organizational bases of power scales were low relative to the other scales and were slightly below the ideal range for internal consistency reliability. As noted above, these modest coefficients were anticipated in consideration of the brevity of most of these scales and their inclusion of negatively worded items. The significant amount of agreement among raters along these measures suggests that the lower levels of internal consistency are likely due to these factors and breadth of the domains assessed as opposed to the construction of the items themselves. Thus, if higher alpha coefficients were desired, simply adding items rather than deleting any of the existing items could achieve this.

Similarly, while the single-item measures of goal setting and interdependence demonstrate reasonable levels of inter-rater reliability, expanding these scales to include multiple items would permit tests of internal consistency that would further strengthen support for their stability. Expanding the number of items measuring influence at different levels might also be considered; however, responses along the current measures are well distributed, demonstrate reasonable levels of inter-rater reliability, and follow the format described by Tannenbaum (1968) for measuring the structure of influence within organizations.

Whereas the reliability results suggest that adding items to the OEI would likely improve the stability of certain scales, the downside would be a longer survey that would require more time to complete. In turn, there is a risk that by lengthening the survey the reliability of the existing measures could be compromised (for example, if people answer questions less carefully in an effort to finish the survey in a certain amount of time). While the OEI is currently not

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an unreasonably long survey, it is usually administered along with the OCI. One alternative would be to develop items that could be added to the supplementary question section of the OEI when an organization expresses particular interest in increasing the reliability of any of the single-item scales or the scales with less than ideal levels of internal consistency. (Supplementary items are already available for scales such as organizational bases of power, which are condensed versions of lengthier scales and sub-scales that have been previously tested.)

CONCLUSION

The OEI is a unique and potentially powerful tool for measuring behaviors and attitudes associated with organizational effectiveness as well as the internal factors and conditions that influence effectiveness and, in turn, be used as levers for change. All of the OEI scales demonstrate reasonable levels of reliability and validity. Subsequently, the OEI provides an excellent alternative to the use of more traditional (and limited) attitudinal surveys, an appropriate supplement to measures of organizational culture, and an efficient means by which organizations can identify important levers for change and improvement.

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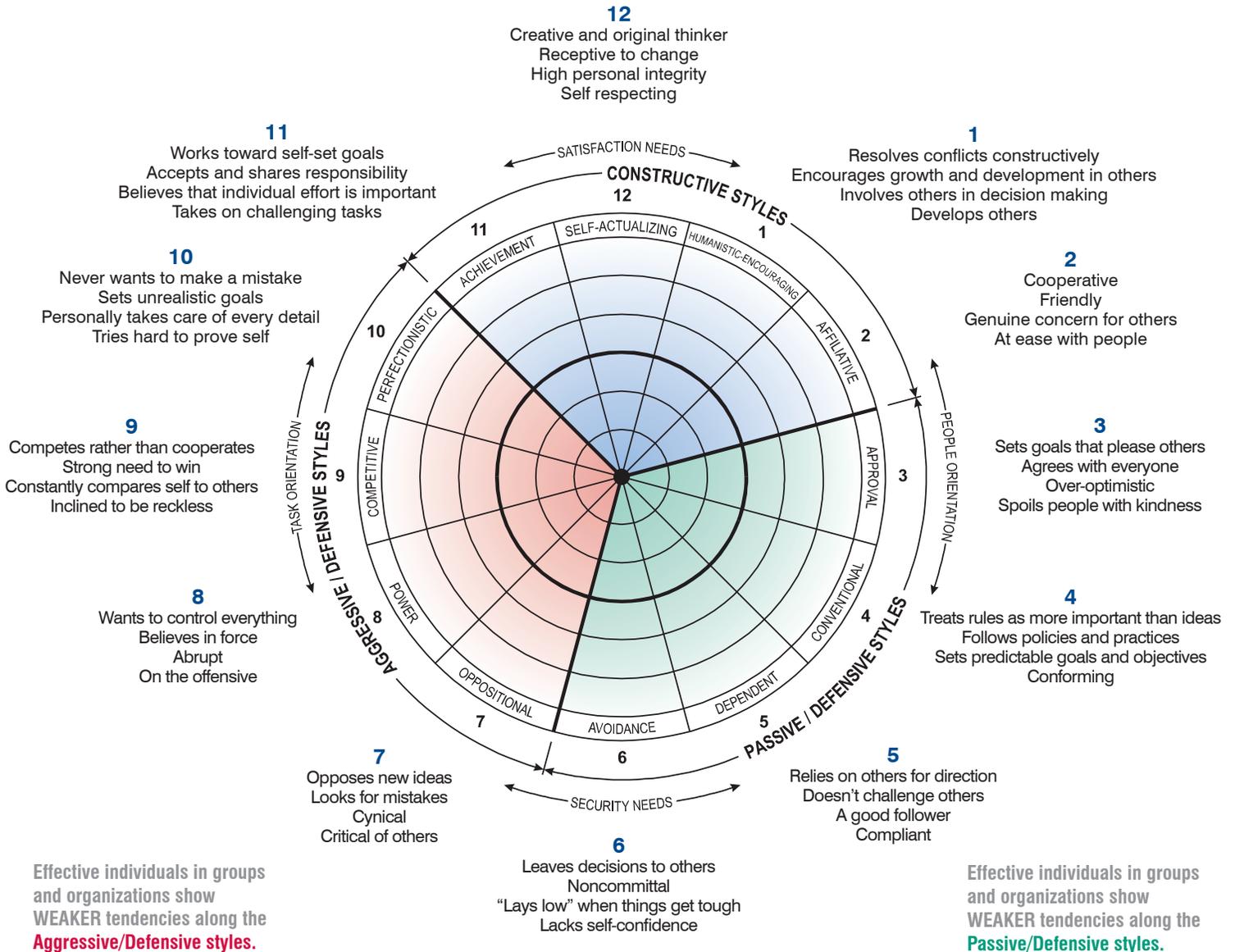
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