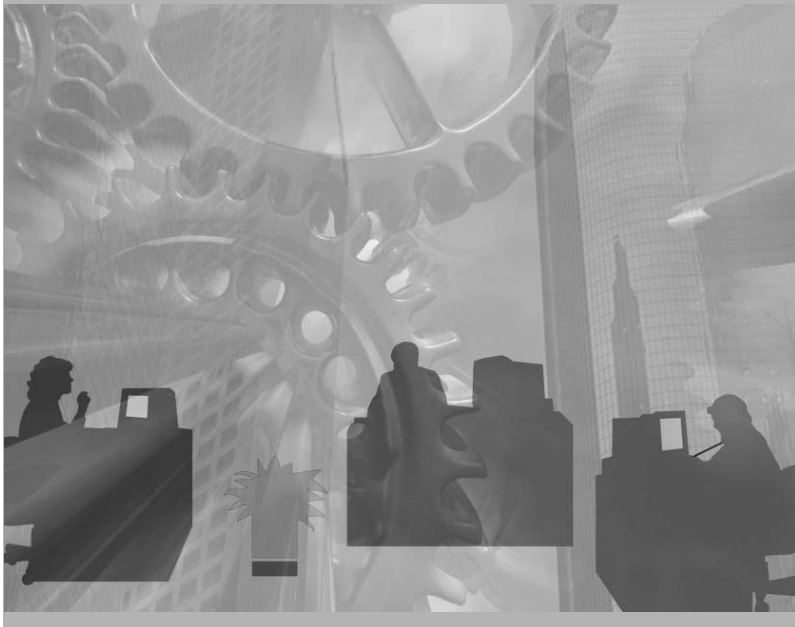
Sajee Sirikrai
Lecturer of depapartment of Industrial and Operations Management,
Faculty of Commerce and Accountancy, Thammasat University

Measurement of Organizational Culture:
A Literature Review

[**ABSTRACT**]

THE knowledge of organizational culture has increasingly received attention among researchers in many fields of study. Traditionally, implications of organizational culture can be understood through a qualitative approach since it was believed that characteristics of organizational culture are complex and difficult to measure as a concept. However, previous work have shown that it is possible to study organizational culture using quantitative techniques. To identify factors that affect reliability of organizational culture measurement, selected scales of organizational culture are reviewed in this paper. Some prospects for scale improvement and inherent challenges are discussed.



Introduction

THE study on organizational culture has received a great deal of attention among researchers in many fields of study. Researchers from the resource-based view school of thought believe that organizational culture is an important explanatory variable of organizational performance. Others use this concept to explain effectiveness of firms in implementing new technology or management philosophy. Organizational culture refers to various attributes of organizations. They may include culture of performance-oriented, long-term employment, quality enhancement (e.g. Rodsutti and Swierczek, 2002) as well as employees' perceptions on leadership, communication style, human resource management and job conditions (e.g. Hansen and Wernerfelt, 1989).

Since attributes of organizational culture are diverse, it is difficult to measure organizational culture as a holistic concept. There are several studies pursuing this effort, nonetheless, According to a literature reviewed, this paper presents a discussion of the concept and measurement methods available for organizational culture assessment. Finally, some possibilities to advance the measurement of organizational culture using quantitative approaches are proposed.

Dimensions of Organizational Culture

FROM the anthropologist and organizational researcher's points of view, culture is "a set of cognitions shared by members of a social unit and acquired through socialization processes" (Cooke and Rousseau, 1988). Organizational culture is inherent in the core organizational values, which is often unconscious and rarely discussable (Hofstede et al., 1990). In other words, culture involved an evolution of the organizational context and is collectively held among members of the organization, as well as complex enough to resist direct manipulation (Denison, 1996). Knowledge in this field could be advanced via new sets of concepts derived by well-trained observers (Schein, 1996).

Several researchers attempt to identify dimensions of organizational culture. Hofstede et al., (1990) suggest that organizational culture can be observed through behaviors of organizational members. Manifestations of culture range from the deepest level, i.e., the value, to the outer shells of rituals, heroes and symbols. According to the authors, business practices such as levels of control and decision-making styles are characteristics of organizational cultures. On the other hand, Patterson et al. (1996) argue that situational aspects of organizations such as perceptions, thoughts, feelings, and behaviors of organizational members should be referred to as organizational climate. From this perspective, observable facts about organizations are considered as organizational climate, only the deeply rooted value is considered culture. Differences between studies of culture and climate of organizations were found in the epistemological preferences and selection of research methodology (Denison, 1996). The literature on culture tends to base on the "emic" (or native) point of view and required qualitative field observation to understand the underlying values, which are held among organizational members. In contrast, several studies of organizational climate are found using quantitative surveys of the organizational environment observable from the "etic" (or researcher) point of view.

However, many authors do not emphasize the difference between climate and culture of organizations e.g., Chatman (1991), O'Reilly et al. (1991), Schneider and Reichers (1983) and Poole (1985), cited in Denison (1996). These researchers believe the two aspects explain the same phenomenon. Therefore, it can be said that organizational culture consists of both invisible and visible parts. The invisible elements refer to the group of values shared among organizational members. They are basic assumptions which are claimed to be the most important level of culture (Schein, 1984; quoted in Xenikou et al., 1996); systems of unconscious values and belief (Rodsutti, 2002: 15); core organizational value (Hofstede et al., 1990); and conscious values (Cooke and Rousseau, 1988). The visible elements are expressed in terms of behavioral norms (Cooke and Rousseau, 1988) and organizational practices (Hofstede et al, 1990). These elements include, for example, communication styles, performance measurement practices, decision-making process, problem solving, as well as artifacts such as physical equipment, attire, uses of jargon, logos and title, etc. Through an extensive review of previous works, Detert et al.

(2000) proposed eight dimensions of organizational culture as follows:

1) the basis of truth and rationality in the organization,
2) the nature of time and time horizon,
3) motivation,
4) stability versus change / innovation / personal growth,
5) orientation to work, task and coworkers,
6) isolation versus collaboration / cooperation,
7) control, coordination and responsibility
8) orientation and focus-internal and / or external.

The contingency theory suggests that different emphases on each cultural dimension serve different organizational purposes (Detert et al., 2000). Therefore, a strategic direction of an organization should signify desirable attributes and degrees of strength of dimensions of culture (Cooke and Rousseau, 1988; Hofstede et al., 1990). For example, organizations in service industry are generally more external oriented, such as to customers' perspective. On the other hand, mass-manufacturing firms may be inherent with internal-focus culture, because they are oriented to achieving high production efficiency.

In addition, demographics such as age and education of organizational members can lead to different values of each cultural dimension that individuals perceive (Hofstede et al., 1990). Cooke and Rousseau (1988) also report intra-organizational differences in behavioral norms across hierarchical levels. Thus, occupational values that individuals acquired during formal education may result in subcultures within an organization. This area still receives limited interests among researchers (Detert et al., 2000).

Measurement of Organizational Culture

THE use of qualitative methods has been well established among traditional organizational culture studies. As rooted from the anthropological discipline, this method provides an understanding of how organizational members interpret their experiences and how these interpretations influence their behaviors (Van Muijen et al., 1999). However, it is exceedingly difficult to systematically study the organizational culture overtime

or compare culture across organizations by using this approach (Xenikou and Furnham, 1996).

In contrast, the quantitative approach can be useful for these studies. Using a questionnaire which is specifically designed for measuring organizational culture, researchers can perform a large-scale survey to compare culture across organizations as well as to perform a longitudinal study about each firm. This method can also be used to complement qualitative techniques and vice versa. For example, Zamanou and Glaser (1994) employed the Organizational Culture Scale (OCS) to measure a cultural shift in a government agency. This survey was a part of a triangulation study that also involved interview data and direct observation. Hofstede et al. (1990) study organizational culture across twenty firms in two European countries. In this study, previous literature and in-depth interview conducted earlier were used as a basis for the development of a new standard questionnaire. Researchers have increasingly developed standardized questionnaires, or scales of organizational culture and used them as the tool for organizational culture measurement. The effectiveness of these tools is obviously important to the organizational study.

Xenikou and Furnham (1996) examined four major scales of organizational culture namely the Organizational Culture Inventory (OCI), the Culture Gap Survey (CGS), the Organizational Beliefs Questionnaire (OBQ) and the Corporate Culture Survey (CCS). Table 1 presents concise characteristics of these scales.

Table 1 Comparison of organizational culture scales

Scales	Developer(s)	Cronbach's alpha*	Summary#
OCI	Cooke & Lafferty (1989)	0.60-0.95 (0.67-0.92)	Focus on measurement of behaviors, using 12 subscales: 1) humanistic/helpful, 7) dependence, 2) affiliation, 8) avoidance, 3) achievement, 9) oppositional, 4) self-actualization, 10) power, 5) approval, 11) competitive and 6) conventionality, 12) perfectionism
CGS	Kilmann & Saxton (1983)	0.60-0.86 (0.83-0.94)	Focus on measurement of behavioral norms, using 4 subscales: 1) task support, 3) social relations and 2) task innovation, 4) personal freedom
OBQ	Sashkin (1984)	0.35-0.78 (n/a)	Focus on measurement of organizational values, using 10 subscales: 1) work should be fun, 6) quality, 2) being the best, 7) communication, 3) innovation, 8) growth/profit orientation, 4) attention to detail, 9) hands-on management and 5) value of people, 10) shared philosophy
CCS	Glaser (1983)	0.55-0.77 (n/a)	Focus on measurement of organizational values, using 4 subscales: 1) values, 3) rituals and 2) heroes/heroines, 4) network

Remarks: ** Reliability shown was obtained from Xenikou and Furnham (1996); Numbers in parentheses were from the developers' own or related assessment.*

 # All subscales were based on original works.

In their work, managerial and non-managerial respondents of two British organizations completed all the four scales. The result suggests that the measurement of organizational values turned out to be less reliable, compared with items related to behavior. Then, a correlation analysis and a factor analysis were also performed across items of these scales. The four scales produced six consolidated subscales including

1) openness to change, innovation and achievement in a humanistic environment,
2) value of being excellent organization or task-oriented organizational growth,
3) bureaucratic culture,
4) negativism and resistance to new ideas,
5) socialization in the workplace and
6) organizational artifacts.

It can be said that these scales measure six characteristics of organizational culture and the scales are considerably overlapped. However, all subscales of the CCS fell exclusively into the category of organizational artifacts. Thus, the CCS may be a less compelling scale since it covers only one aspect of organizational culture. The OCI may be the most valid and reliable scale because it had the best internal reliability (Cronbach's alpha) and loaded on four of the six consolidated subscales.

Apart from these four well-known scales developed in the 1980s, new scales are also produced. Van Muijen et al. (1999) introduced the Focus Questionnaire to measure organizational practices and values. Tang et al. (2000) argued that the existing scales did not capture the Japanese management philosophy. Thus, they proposed the Japanese Organizational Culture Scale (JOCS) to investigate the differences between Japanese-owned and US-owned organizational cultures. Reigle (2001) constructed the Organizational Culture Assessment (OCA) to measure organizational culture in engineering management setting. Newly developed scales tend to be customized to suit specific types of the organization under each study. These new scales are reviewed as follows.

- *The Focus Questionnaire (Van Muijen et al., 1999)*

Having based on the competing values model of Quinn (1988), Van Muijen et al. (1999) explained four orientations of organizational focus with respect to two dimensions of organizational value, i.e., the flexibility versus control, and the internal versus external points of view. When the two dimensions of value are coalesced, as shown in Figure 1, four orientations of organizations are revealed, namely support, innovation, rules and goal.

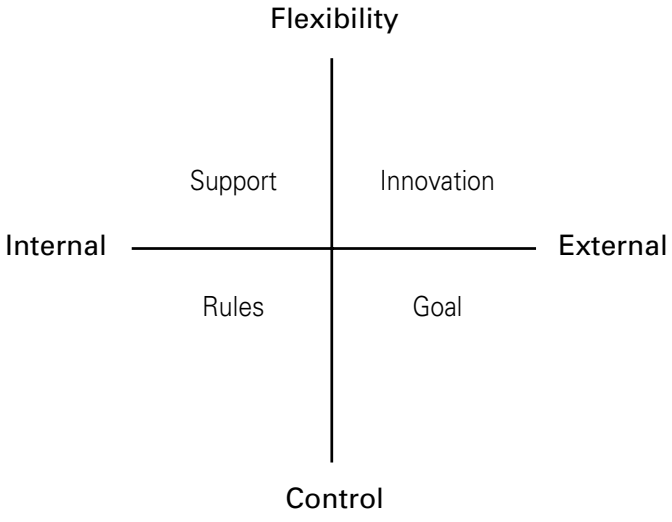


Figure 1: The competing value model
(Quinn's (1988), adapted from Van Muijen et al., 1999)

The support orientation refers to appreciation of value and practices toward participation, cooperation, team work, trust and individual growth. The innovation orientation involves creativity, openness to changes, accountability and commitment of organizational members. The rules orientation is characterized by bureaucratic practices. The goal orientation emphasizes rationality, performance measurement and commensurate reward. It should be noted that two adjacent orientations of organizations share common, underlying values, as suggested by the Quinns model. On the other hand, orientations on diagonal axes should reflect a negative correlation.

The Focus Questionnaire consists of descriptive and evaluative parts. The descriptive part contains 40 questions examining practices of organizations, while the characteristics of organizational value are assessed by 35 questions of the evaluative part. Both parts use the 6-point Likert scale to measure perception of organizational members on characteristics of their organizations. Table 2 presents the summary features of the Focus Questionnaire.

Table 2 The Focus Questionnaire

Subscales	Cronbach's alpha	Number of questions	Samples of questions
Descriptive scale of Support orientation	0.80	at least 6	How often do management practices allow freedom in work?
Descriptive scale of Innovation orientation	0.82	at least 6	How often does the organization search for new product/services?
Descriptive scale of Rules orientation	0.58*	at least 3	How often are instructions written down?
Descriptive scale of Goal orientation	0.76	at least 6	How often is reward dependent on performance?
Evaluative scale of Support orientation	0.91	at least 7	How typical failure is accepted?
Evaluative scale of Innovation orientation	0.69*	at least 4	How typical openness to criticism?
Evaluative scale of Rules orientation	0.77	at least 4	How typical compliance to standards?
Evaluative scale of Goal orientation	0.83	at least 6	How typical clear objectives?

**Note that this scale has an alpha less than 0.70.*

The questionnaire was tested with a sample of participants across managerial levels and industries from 11 countries. Results of a partial correlation analysis provided a too strong positive correlation *(r = 0.31)* between the support and the goal orientations, and a too weak correlation *(r = 0.12)* between the rules and the support orientations, on the evaluative (value) scales. Both coefficients of correlation were not turned out as expected. Diametric orientations (the support VS the goal) should have a negative correlation, while adjacent orientations (the rules VS the support) should be more positively correlated. However, other pairs of correlation analysis produced coefficients as expected, especially those of descriptive (practice) scales. It can be said that the Focus Questionnaire is useful for measuring the visible part of organizational culture, but seems to have a limitation on measuring the invisible part the—organizational value.

- *Japanese Organizational Culture Scale, JOCS (Tang et al., 2000)*

According to Tang et al. (2000), the Japanese management philosophy involves four concepts: 1) family orientation and loyalty, 2) open communication and consensual decision-making, 3) the team approach and 4) knowledge of managers, which are not covered by previously developed scales. The authors propose a set of 15 questions, asking respondents to rate the extent to which they agree upon statements of attitude, using the 5-point Likert scale.

JOCS was tested with responses from 300 employees of two automotive factories in the US. One is the Japanese transplant; another is the US-owned factory. Participants were equally distributed between white and blue collars. Table 3 lists the items and the Cronbach's alpha coefficients of the subscales.

Table 3 JOCS and its measures of reliability

Subscales and Items	Cronbach's alpha from each group of respondents		
	Japanese-owned	US-owned	Both
Family orientation / Loyalty	0.85	0.81	0.87
1. My company tries to create a unique "family atmosphere"			
2. My company emphasizes strong loyalty and dedication			
3. My company emphasizes open communication			
4. My company treats each employee as a total person			
5. I feel that my organization has a real interest in the welfare and overall satisfaction of those who work here			
Open communication			
6. My manager/supervisor encourages people to speak up when they disagree with a decision			
7. My manager gives me the freedom to express idea	0.87	0.87	0.88
8. I feel that my manager values my ideas and inputs			
9. My manager is open to all questions			
Team approach			
10. I have a chance to meet with my manager one-to-one at least twice a year to discuss performance and goals			
11. My manager encourages people to work as a team	0.77	0.74	0.78
12. My manager encourages people who work in my group to exchange opinions and ideas			
Knowledge of managers			
13. My manager often communicates the overall organizational goals to us			
14. I feel that my manager has the knowledge and training to be a good leader	0.81	0.82	0.80
15. My manager provides help, training, and guidance so that I can improve my performance			
Overall Cronbach's alpha (15 items)	0.92	0.90	0.92

Results of internal reliability test showed that JOCS is a quite reliable scale. In addition, results of correlation analysis among the subscales were considerably high, see Table 4. Therefore, it seems that all 15 items measure a single construct i.e., the Japanese management philosophy.

Table 4 Correlations* of the subscales

	Family orientation / Loyalty	Open communication	Team approach	Manager's knowledge
Overall JOCS	0.77	0.86	0.85	0.84
Family orientation / Loyalty	1.00	0.54	0.53	0.49
Open communication		1.00	0.66	0.66
Team approach			1.00	0.66
Manager's knowledge				1.00

** All correlations were significant ($p < 0.05$)*

Despite a coherent result, it should be noted that this scale measures mostly the behavioral aspect of organizational culture. Also, it was tested in a homogeneous context, where all respondents were in the same industry and had somewhat a similar working environment.

- *Organizational Culture Assessment, OCA (Reigle, 2001)*

The OCA scale was developed to assess organizational culture in high-technology organizations. The author proposed that members of these organizations are knowledgeable and highly skilled personnel, working with rapid technological changes. Thus, an appropriate cultural measurement scale should take into account the characteristics of such a working environment. Based on previous definitions of organizational culture defined in the engineering management literature, Reigle (2001) identifies five dimensions of culture which include 1) language, 2) artifacts and symbols, 3) patterns of behavior, 4) espoused values and 5) beliefs and underlying assumptions. Using an organizational structure taxonomy by Burns and Stalker (1961), cited in Reigle (2001), attributes of the culture dimensions are categorized into the organic and mechanistic types. Therefore, each dimension of culture consists of both organic- and mechanistic-oriented attributes. Table 5 presents the attributes of each cultural dimension. According to Reigle (2001), the cultural attributes should be congruent with the nature of organizations.

Table 5 Framework of organizational culture and structure of the OCA scale

Dimensions	Organic attributes	Mechanistic attributes
Language	• Heroes/heroines, storytellers • Positive myths & legends	• Acronyms and Jargons • Negative metaphors
Artifacts and Symbols	• Symbols represent integration & support • Open-door policy	• Symbols enforce segregation (such as different attires) • Small cubicles for non-managers
Patterns of behavior	• Celebrate work accomplishments • Look for ways to do job better	• Celebrate retirements • Long work hours expected
Espoused values	• Praise for good performance • Flexible work hours	• Quality of work stressed • Due dates stressed
Beliefs and underlying assumptions	• McGregor's Theory Y: employees want to work, employees need little direction	• McGregor's Theory X: employees must be coerced to work, employee need detailed direction

The OCA was developed with respect to the above framework of organizational culture. It consists of 45 questions, using the 8-point Likert scale. These items are grouped into five sections; each of which represents a cultural dimension. Respondents were asked to rate 1 to 8. A score closer to 1 denoted a mechanistic attribute, contrasted to ones close to 8, which represented the organic-oriented type.

A survey of 275 individuals from thirty companies was used to test this scale. Its validity was assessed through a comparison study with results obtained from the Likert Profile of Organization

Characteristics (POC), using the same group of respondents. Results shown that both scales provided relatively consistent scores. The OCA had high concurrent validity compared to the POC. In addition, Cronbach's alphas and Spearman-Brown split-half coefficients were employed as measures of internal reliability. Overall, the OCA appeared to be a reliable scale, having a 0.9 Spearman-Brown coefficient, and a 0.95 Cronbach's alpha. Reliability of questions on all cultural dimensions were also satisfactory, meaning that the scale is internally consistent, see Table 6.

Table 6 OCA Cronbach's alpha (Reigle, 2001)

Dimensions	Cronbach's alpha
Language	0.70
Artifacts and Symbols	0.81
Patterns of behavior	0.78
Espoused values	0.86
Beliefs and underlying assumptions	0.87

Concluding Remarks

This paper presents a review of concepts and measurement methods of organizational culture. The knowledge of organizational culture enables practitioners and scholars to appreciate implications of culture on various organizational development processes such as change management (Sadri and Lees, 2001); strategic management (Powers, 1999); and new technology implementation (Lewis and Boyer, 2002). On the one hand, studying organizational culture by qualitative approaches helps researchers to understand various characteristics of culture and to advance the development of conceptual frameworks to better explain organizational culture. On the other hand, the use of quantitative methods can help to reduce uncertainties and biases related to observations inherent in the use of qualitative approaches. The development of organizational culture scales is found having based on conceptual frameworks of culture which are usually existing. Therefore, using reliable organizational culture scales makes the assessment of organizational culture more systematic.

However, this paper also shows that the invisible part of culture, such as a basis of truth and rationality in the organization, are not adequately covered by many major scales. Measures of the value-related dimension are not satisfactorily reliable, in contrast to items related to the behavioral aspect of organizational culture (Xenikou and Furnham, 1996). The difficulty of measuring value was reported in Goll and Zeitz (1991). In their study, a scale of the articulated values and beliefs of top management was developed based on corporate ideology theories. The scale reliability the Cronbach's alpha was much lower than an acceptable point, though the research participants were purely corporate executives. If the construct is valid, expressing values in words and comprehending them maybe considerable challenges toward achieving scale reliability.

Since the measurement of value is a challenging task in the scale development, some researchers attempt to incorporate certain dimensions of value into their newly developed scales. Tang et al. (2000) attempted to measure the extent to which Japanese management philosophy is involved in culture of organizations. Reigle (2001) presented a method to incorporate occupational factors into measurement of organizational culture. With a narrower, context-specific focus, overall reliability of these scales are satisfactory. In fact, this reflects an existence and importance of subcultures in particular organizations. Subcultures can result from a variety of hierarchical and functional factors which are borne to a particular working environment as well as the characteristic of organizational members (Detert et al., 2000, Cooke and Rousseau, 1988). Thus, the research on specific, customized scales is necessary for a better understanding of organizational culture.

The measurement of organizational culture using quantitative techniques still require further development. In addition to designing organizational culture scales with the context-specific focus as pointed out above, researchers may try using action-oriented words in the questionnaires that measure organizational value as done in Tang et al. (2000). By these two strategies, the problem of measuring the invisible part of organizational culture and the reliability of scales can be alleviated. Otherwise, more qualitative studies of organizational culture are needed to provide a better understanding about organizational value. As a result, both the qualitative and quantitative approaches to the organizational culture study can facilitate the development of better scales and broaden the benefit of organizational culture knowledge.

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