

THE NEXT GENERATION OF THE ORGANIZATIONAL CULTURE PROFILE

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Abstract

This paper examines the development of a new version of the Organizational Culture Profile (OCP) (O'Reilly, Chatman and Caldwell, 1991). The current study aimed to overcome the limitations associated with the Q-sort methodology used in earlier versions by developing a revised version based on a Likert scale and using a large, diverse, Australia-wide sample (N=1918). The statistical software package, AMOS (Arbuckle and Wothke, 1999) was used to undertake confirmatory factor analysis (CFA) which tested the theoretically derived, hypothetical structure of factors and substantiated the content validity. Composite factor reliability coefficients (Fleishman and Benson, 1987) and Cronbach's alpha coefficients indicated high internal consistency for each of the seven factors. The results should encourage researchers and practitioners to use the instrument for empirical and diagnostic purposes.

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THE NEXT GENERATION OF THE ORGANIZATIONAL CULTURE PROFILE

Studies of organizational culture are varied, multilevel (department, division, company, country), and ubiquitous. Denison (1996) asserts that culture is “the deep structure of organizations, which is rooted in the values, beliefs and assumptions held by organizational members.” That is, when we speak of organizational culture, we refer to the meanings inherent in the actions and procedures of organizational commerce and discourse. Culture evolves and is sufficiently complex to not be manipulated easily, while climate is temporal and often subject to manipulation by people with power and influence (Denison, 1996). Some of the more prominent culture researchers include Alvesson (1993), O’Reilly, Chatman and Caldwell (1991), Schein (1985; 1990), Smircich and Calas (1987), and Trice and Beyer (1992).

Organizational culture is shaped by varying aspects of organizational life, such as strategies, interpersonal relationships, and context (Schneider, 1980; Joyce and Slocum, 1982; Joyce and Slocum, 1984; Seihl and Martin, 1990; Dension and Mishra, 1995; Carroll and Harrison, 1998; Cabrera and Bonache, 1999). The pervasiveness and importance of values in organizational culture and subsequently in the development of commitment, satisfaction, trust, and performance is well known (Ashforth and Mael, 1989), but lacking sufficient empirical evidence. Wilderom, Glunk and Maslowski (2000, p. 193) advocate the conduct of comprehensive, empirical studies using sophisticated measures to validate the “strong belief among researchers that the performance of organizations is attributable, in part, to organizational culture.” There is some indication that culture directly influences trustworthy behavior through social learning processes (Whitener, Brodt, Korsgaard and Werner, 1998), whereby managers receive social rewards when they behave in a manner consistent with cultural values and norms (O’Reilly and Caldwell, 1985).

A major thrust in the investigation of cultural values and norms has focused on identifying national cultures (Hofstede, 1980; 1991). However, Adler and Boyacigiller (1996) suggest that there has been too much emphasis placed on identifying national cultures which has neglected the inclusion of explanatory organizational behavior variables, such as industry and company contextual factors. Further, Subramaniam and Ashkanasy (2001) have called for research using large samples to provide a more comprehensive understanding of culture. The Organizational Cultural Profile (OCP) was developed in an attempt to address these deficiencies, and our study aims to further improve the instrument to advance research on culture within organizations.

The Organizational Culture Profile

The Organizational Culture Profile (OCP) developed by O’Reilly, Chatman and Caldwell (1991) has been identified as a measure of culture and values as one facet of culture at the organizational level (Agle and Caldwell, 1999), and as one of the top ten culture instruments in use today (Judge and Cable, 1997; Howard, 1998; Agle and Caldwell, 1999). Further, in a review of 18 culture measures, published between 1975 and 1992, Ashkansay, Broadfoot and Falkus (2000) reported that the OCP was one of only a few instruments to provide details concerning reliability and validity. Originally, the OCP was developed to examine the congruence between individual and organizational values (O’Reilly et al., 1991). The OCP was used by Cable and Parsons (Cable and Parson, 2001) to confirm the importance of person-organizational fit when evaluating and hiring job applicants.

Previous studies used versions of the OCP which relied on a Q-sort method for acquiring respondent data which may compromise the utility of using the OCP across large samples in various settings. O’Reilly et al. (1991) developed a means of assessing culture on the basis of the aggregated value orientations of individuals in organizations. They developed the OCP, modified with permission for use in this study, to determine the person-culture fit on the basis of extant values. Subramaniam and Ashkanasy (2001) used the OCP to investigate the links between management approaches and job-related outcomes but their study was delimited to two dimensions of the OCP, namely Attention to detail and Innovation. Our study further contributes to this extant research by clarifying the factor structure of the OCP as a foundation for subsequent research which investigates how types of organizational culture in association with specific leadership approaches account for differences in the outcomes of job satisfaction, job stress, commitment, trust, loyalty, and respect.

Development of the OCP Instrument

The OCP developed by O'Reilly, Chatman and Caldwell (1991) and since revised by Cable and Judge (1997) and Judge and Cable (1997) was used to measure organizational and personal culture orientations. Recent research by Vandenberghe (1999) has applied the OCP in a European context (Belgium) and a different occupational setting (health care industry) compared to the original US study. Vandenberghe (1999, p. 183) has recommended that more cross-cultural analysis of the OCP is warranted: "additional work is needed on the structure of the OCP across nations and industries." Howard (1994) has suggested that the reliability of all OCP dimensions requires investigation. In personal correspondence to the researchers, both Cable (personal communication July 29, 1999) and Vandenberghe (1999) have confirmed the need to examine the structure of the OCP in more detail.

The original version of the OCP consisting of 54 value statements used exploratory factor analysis to establish eight dimensions of organizational culture, namely innovation, attention to detail, outcome orientation, aggressiveness, supportiveness, emphasis on rewards, team orientation, and decisiveness. The instrument used the Q-sort method of data collection (Block, 1978) to identify values that characterize a target organization and an individual's preference for that particular configuration of values. O'Reilly et al. (1991) reported an average reliability coefficient for the OCP of 0.88, while Vandenberghe's (1999) study established an average reliability of 0.86. Chatman (1991), Chatman and Jehn (1994) and O'Reilly et al. (1991) used Q-methodology on the understanding that there is no better way to understand the shared meanings of cultures than by exploring the conceptual frameworks and subjective meanings underlying these cultures. The current study aims to overcome the limitations associated with the Q-methodology and develop a revised version of the OCP using a large, diverse sample.

METHOD

Pre-Test

For the purpose of the present study, an abbreviated version of the OCP (Cable and Judge, 1997) consisting of 40 items was used which had an overall test-retest reliability of .87. The shorter version of the OCP was further modified for the current study by developing a Likert-type scale for ease of completion of the instrument by respondents without the need of the researcher facilitating the study as required in Q-sort methodology. In this revised and reformatted version, respondents were required to indicate the organization's characteristic cultural values orientation along a five-point Likert scale where 1=Not At All, 2=Minimally, 3=Moderately, 4=Considerably, and 5=Very Much (amending the original Q-sort procedure to a normative scale). Representative items of organizational culture measured by the OCP are "Adaptability," "Taking individual responsibility," and "Not being constrained by many rules." Permission to use an amended and revised version was received from the American Psychological Association (27 September 1999) and Professor Charles O'Reilly (21 December 1999).

Sample

A total sample of 200 respondents consisting of graduate students and practising executives attending graduate management classes in two universities and four campuses throughout Australia was used in the development of our version of the OCP. Results revealed the factor structure of the Cable and Judge (1997) version of the OCP was not replicable when the Q-sort method of data collection was not utilised. This finding raises issues concerning the construct validity of the instrument as devised by Cable and Judge (1997). Based on item-to-subscale correlations (Nunnally, 1978), the results of our pre-test established the following factors for the OCP and their associated Cronbach alpha coefficients (shown in parentheses): Competitiveness (formerly Outcome Orientation) ($\alpha=.79$); Social Responsibility (combination of Outcome Orientation and Innovation) ($\alpha=.80$); Supportiveness ($\alpha=.81$); Autonomy (formerly Innovation) ($\alpha=.65$); Emphasis on Rewards ($\alpha=.62$); Performance Orientation (Outcome Orientation and Innovation) ($\alpha=.60$); Stability (new factor) ($\alpha=.61$); and Detail Orientation ($\alpha=.56$). According to Nunnally (1967), a Cronbach alpha coefficient of .60 is acceptable for a newly developed instrument but the low reliabilities for several factors suggested that further revision to the factor structure could be required. In order to maximise

reliability for each factor, the contribution of each item was examined resulting in a minimum of four items being retained for each factor. Subsequently, the revised OCP instrument consisted of 28 items.

The Validation of the Revised OCP

The revised OCP was incorporated into a multi-instrument survey which was mailed to a stratified sample of 5000 managers who were members of the Australian Institute of Management (AIM). The sample was stratified on the basis of personal membership categorized by state of origin. A total of 1,918 usable responses was returned from a final sample size of 4962, representing a 39% response rate. There were no statistically significant differences between the achieved and proposed sample categorized by state of origin. The majority of respondents were male (76%), between 40-59 years of age (68%), evenly distributed between top and executive (CEO, COO, VP) (50%) and upper middle (Department Executive, Superintendent, Plant Manager) (50%) levels of management, had 12 or more years experience as an executive (55%), with 54% in organizations of 499 or fewer employees and 30% in organizations with 1000 or more employees.

Factor Analysis of the Revised OCP

The preliminary analysis of the OCP conducted by O'Reilly et al. (1991) used exploratory factor analysis to establish the underlying dimensions of the OCP. However, exploratory factor analysis does not ensure that items loading on a single factor are measuring the same theoretical content (Finch and West, 1997). Although exploratory factor analysis is a useful technique for assessing the construct validity of a measure based on the empirical assessment of item clustering, the current study followed the recommendation of Schriesheim, Powers, Scandura, Gardiner, and Lankau (1993) that Confirmatory Factor Analyses (CFA) should be used to improve the rigour with which content validity is assessed.

The statistical software package, AMOS (Arbuckle and Wothke, 1999) was used to undertake confirmatory factor analysis (CFA) which tests the theoretically derived, hypothetical structure of factors. CFA overcomes the limitations associated with mathematically determined factor structures using exploratory factor analysis (Long, 1983). Empirical data reduction techniques such as exploratory factor analysis do not address the issue of content adequacy which should be based on the theoretical correspondence between a measure's items and a factor's delineated content domain (Schriesheim et al., 1993). In contrast, specific theoretical relationships among observed indicator items can be identified and tested using CFA to produce composite factors.

The most basic form of CFA is a one-factor congeneric measurement model as described by Jöreskog (1971) which enables the specified interrelationships among observed variables (items) for a single latent factor to be examined in detail. One-factor congeneric measurement models were calculated based on substantive theory to determine factor score weights for composite factors, to model error in the measurement of observed variables, and to calculate composite factor reliabilities. Although three observed variables (items) are considered statistically adequate for a just identified model, Chin (1998) suggested that it is preferable to have four items loading on each factor to test for convergent validity. Items which had t -values which were not significant, where the standardized regression weights indicated weak effects, and where low (less than .3) squared multiple correlations indicated that the item was not a good measure of the factor were omitted from further calculations.

The resulting composite factors took into account the differences in the degree to which each individual item contributed to the overall composite (latent) factor, thus ensuring that each factor provided a realistic representation of the data (Fleishman and Benson, 1987). This method is more rigorous than computing composite factors based on factor scores or additive indices of items which ignore the relative contribution of each item to the composite factor. Further, congeneric measurement models minimize measurement error in the items contributing to each factor and thus increase the reliability (and validity) of the composite factors (Rowe, 1995). The validity of the composite factors was assessed by examining the fit statistics which estimate how well the model fits the data.

A CFA model was estimated where all composite factors loaded on one latent variable, namely Organizational Culture. The sample was randomly split (i.e., a cross validation strategy) and the model was calculated for each half sample (Samples A and B) and for the total sample (Sample C). The goodness-of-fit of the hypothesized model to the data was assessed using absolute and comparative fit indices (Arbuckle and Wothke, 1999).

Results

Based on the nature of the items loading on each composite factor and taking into account the original factor labels where appropriate, the new, shortened version of the OCP consisted of a 28-item, seven factor structure as follows: Supportiveness, Innovation, Competitiveness, Performance Orientation, Stability, Emphasis on Rewards, and Social Responsibility.

Table 1 presents the means, standard deviations and variances for each composite factor which were used to calculate the composite factor reliability coefficient according to the procedure suggested by Fleishman and Benson (1987) and Jöreskog (Jöreskog, 1971) which maximises the reliability of the composite factor. For comparative purposes, the traditional estimates of internal consistency, Cronbach's alpha coefficients have been provided. However Cronbach's alpha coefficients are lower-bound estimates based on negatively-biased and inappropriate Pearson product-moment correlations among the constituent items (McDonald, 1981). The results indicate that the composite factor reliability coefficients exceed the Cronbach's alpha coefficients for all factors except for Supportiveness and Social Responsibility. Both measures indicate high internal consistency for each factor.

Insert Table 1 here

Table 2 presents the inter-factor correlations for each factor for the OCP. There were significant correlations at the $p < .01$ among all OCP factors. The most highly correlated factors were performance and competitiveness (.76) and reward and supportiveness (.80) which provides support for convergent validity of the OCP. Weaker correlations were evident for stability with innovation (.34), competitiveness (.43), and performance (.35).

Insert Table 2 here

Figure I presents the CFA model where all composite factors loaded on one latent variable, namely Organizational Culture for the total sample (Sample C). Both absolute and comparative fit indices were calculated for Samples A to C as presented in Table 3.

Insert Figure 1 and Table 3 here

The fit measures for all samples (A to C) indicated that the model provided an adequate fit of the data with very little variation evident among samples. The results for the total sample (N=1918) were as follows: a χ^2/df ratio of 4.15, a Goodness-of-Fit Index of 0.99, an Adjusted Goodness-of-Fit Index of 0.98, a Standardized Root Mean Residual of 0.01 and all comparative fit indices above 0.95.

The new, shortened version of the OCP now consists of a 28-item, seven factor structure as follows (reliabilities are shown in parentheses):

- ◆ **Competitiveness ($\alpha=.75$)**
 - ◆ Achievement orientation
 - ◆ An emphasis on quality

- ◆ Being distinctive - being different from others
- ◆ Being competitive
- ◆ **Social Responsibility ($\alpha=.74$)**
 - ◆ Being reflective
 - ◆ Having a good reputation
 - ◆ Being socially responsible
 - ◆ Having a clear guiding philosophy
- ◆ **Supportiveness ($\alpha=.87$)**
 - ◆ Being team oriented
 - ◆ Sharing information freely
 - ◆ Being people oriented
 - ◆ Collaboration
- ◆ **Innovation ($\alpha=.80$)**
 - ◆ Being innovative
 - ◆ Quick to take advantage of opportunities
 - ◆ Risk taking
 - ◆ Taking individual responsibility
- ◆ **Emphasis on Rewards ($\alpha=.80$)**
 - ◆ Fairness
 - ◆ Opportunities for professional growth
 - ◆ High pay for good performance
 - ◆ Praise for good performance
- ◆ **Performance Orientation ($\alpha=.74$)**
 - ◆ Having high expectations for performance
 - ◆ Enthusiasm for the job
 - ◆ Being results oriented
 - ◆ Being highly organized
- ◆ **Stability ($\alpha=.66$)**
 - ◆ Stability
 - ◆ Being calm
 - ◆ Security of employment
 - ◆ Low conflict

Discussion

The purpose of this paper was to examine the psychometric properties of the revised Organizational Culture Profile. Our preliminary analyses did not support the original factor structure which led to revision and restructuring of the measurement attributes of the OCP. The revised OCP uses a Likert scale instead of an ipsative scale and provides a more versatile and user-friendly means to investigate individual perceptions of organizational culture using large samples. Thus, the restructured instrument should provide a diagnostic tool for evaluating organizational culture according to the seven dimensions and addresses Subramaniam and Ashkanasy's (2001) call for a more comprehensive understanding of culture. The study established the validity and internal consistency of factors in the revised instrument.

The revised instrument should be a valuable tool for stimulating worthwhile discussion among organizational members and build understanding of the values that underpin the organizational culture profile. The OCP may also be used to: (1) provide insight into similarities and differences concerning cultural profiles, particularly when organizational mergers or takeovers are proposed; (2) identify targets for organizational change in order to survive, adapt, and prosper in a turbulent environment; and to monitor cultural change. There is considerable evidence that the success of performance enhancing strategies such as reengineering,

TQM, and downsizing is dependent on cultural change (Becker and Gerhart, 1996; Daymon, 2000; Delaney and Huselid, 1996; Heifetz and Laurie, 1997; Kanungo, 1998; Martin, Sitkin and Boehm, 1985; Siehl and Martin, 1990). The new instrument will facilitate the monitoring of organizational cultural change in conjunction with changes in values, leadership styles, and approaches to problem solving; and (3) provide operational data to aid in the recruitment and selection of new employees. According to Cable and Parsons (2001), job applicants self-select into organizations based on subjective person-organization fit and interviewers use an estimation of person-organization fit when evaluating and hiring job applicants. The revised OCP may enable more accurate information to be provided on person-organization fit which could lead to improved recruitment, selection, and socialization practices.

Limitations

A number of limitations apply to our study, the first of which is the use of individual-level data. Similar to Subramaniam and Ashkanasy (2001), and consistent with Rousseau (1990) we assert that our data are valid as the focus is on individuals whose job outcomes such as satisfaction and stress are affected by their perceptions of culture and leadership. Another limitation relates to data collection at a single point in time (as in the case of this study), which does not allow for changes in perception and attitudes over time. For this reason, a longitudinal study of culture and leadership is strongly recommended and long overdue.

A third limitation concerns the use of self-report survey data, which can be affected by leniency or inflated responses. Again consistent with Subramaniam and Ashkanasy (2001), the use of a range of measurement scales assessing a variety of relationships among key variables in our study may mitigate the problem of common method bias associated with self-report data.

CONCLUSION

This study provides a foundation for future research concerning organizational culture and relationships with a range of organizational behavior variables. The results, based on a large, nation-wide, diverse sample of business executives established the content validity and internal reliability of the seven factors of the revised OCP. The multidimensional measure of organizational culture should contribute to furthering our understanding of various aspects of organizational behavior and provide a valuable and user-friendly instrument for researchers and practitioners.

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Table 1: Means, Standard Deviations, Variance, and Reliabilities for OCP Factors (N=1918)

Composite Factor ^a	Mean	SD	Variance	α^b	r_c^c
Supportiveness	3.70	0.90	0.81	0.87	0.77
Innovation	3.50	0.91	0.82	0.80	0.92
Competitiveness	3.37	0.65	0.42	0.75	0.85
Performance Orientation	4.02	0.71	0.51	0.74	0.88
Stability	3.46	0.72	0.52	0.66	0.94
Emphasis on Rewards	3.61	0.90	0.80	0.80	0.87
Social Responsibility	3.93	0.74	0.55	0.74	0.71

^a 1 = Not at all, 2 = Minimally, 3 = Moderately, 4 = Considerably, and 5 = Very much.

^b α = Cronbach's alpha

^c r_c = composite factor reliability coefficient calculated from the maximally weighted factor score regression coefficients obtained from fitting one-factor congeneric measurement models to constituent indicator items.

Table 2: Correlation Matrix for the Organizational Culture Profile (N=1918)

	Supportiveness	Innovation	Competitiveness	Performance	Stability	Reward
Supportiveness	1.00					
Innovation	.61**	1.00				
Competitiveness	.62**	.67**	1.00			
Performance	.55**	.58**	.76**	1.00		
Stability	.58**	.34**	.43**	.35**	1.00	
Reward	.80**	.62**	.66**	.62**	.57**	1.00
Social Responsibility	.67**	.49**	.66**	.57**	.58**	.67**

** Correlation is significant at the 0.01 level (2-tailed).

Table 3: Fit indices for the OCP (N=1918)

Sample	N	χ^2	df	χ^2/df	GFI	AGFI	RMR	NFI	IFI	TLI	CFI
A	981	19.15	5	3.83	0.99	0.97	0.01	0.99	0.99	0.98	0.99
B	937	7.58	5	1.52	0.99	0.98	0.01	0.99	0.99	0.99	0.99
C	1918	20.75	5	4.15	0.99	0.98	0.01	0.99	0.99	0.99	0.99

Figure 1: Confirmatory Factor Analysis of the Organizational Culture Profile

