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Influences of industry on organizational culture and climate

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Organizations are affected by their environments. One aspect of environment is the type of industry in which organization operates. Gordon (1991) postulates that organizational culture reflects industry driven assumption about competitive environment, customer requirement and societal expectations. Organizational culture as expressed in the value system, further influences the development of organizational strategy and forms (structure, practices and processes). Hypothesis about relatively greater similarity of organizational cultures within industries regarding organizational values and practices was examined by data collected with a FOCUS questionnaire of organizational culture and climate in 10 organizations related to 5 industries. Implications of results for cultural changes are discussed.

Constructs of organizational culture and climate are powerful means adopted by scholars to understand the functioning and development of organizations. Questions about the nature of these constructs, the possibilities of its measurement, their antecedents and consequences have been attracting the attention of organizational researchers over two decades.

The concept of organizational culture evolved from anthropology to characterize a set of parameters of collectivities that differentiate the collectivities from each other in meaningful ways. As such, the concept is very broad. Allaire and Firsirotu (1984) identified eight major schools of thought relating to organizational culture with different theoretical and research traditions. From a cognitive perspective, culture is viewed as a system of standards for perceiving, believing, evaluating and acting. The concept of organizational climate is one variation of cognitive approach to the assessment of organizational culture (Reichers & Schneider, 1990). From the ecological-adaptionist perspective, culture is seen as a system of transmitted behavioral patterns that serve to adaptation of human communities to their ecological setting. Culture reflects the nature of the adaptation of groups to their local resources (Levy-Strauss, 1976).

The central assumption of the present study is that the cognitive aspects of an organizational culture reflect a broader industry environment. This assumption is grounded in several theories. Open system theory (Katz & Kahn, 1978) assumes continuing interaction of an organization and its environment. Population ecology model (Aldrich, 1979) states that environment affects organization trough the process of making available or withholding the resources, and organizational forms can be ranked in terms of their efficacy in obtaining resources. Resource dependence theory (Pfeffer & Salancik, 1978) states, that environment affects the distribution of power and control within an organization, which, in turn, affects the selection and removal of managers and, finally, the organizational actions and structures. However, the tie between organization and environment is far from perfect and can be described as loosely coupled (Weick, 1979).

The cognitive and ecological adaptionist approaches are closely related. The well - known definition of culture proposed by Schein (1986) embraces elements of both of these traditions: culture can be considered as the pattern of basic assumptions that a given group has invented, discovered, or developed through learning to cope with its problems of external adaptation and internal integration, and that have been proven to be well enough to be considered valid, and, therefore, to be related to new members as the correct way to perceive, think and feel in relation to these problems. The significance of such basic assumptions is obvious because the abilities for adopting resources from their environment depend on organizational intellect (Ansoff, 1980). That intellect comprises the abilities of management and the system of knowledge embodied in organization culture. Davis (1984) specifies two kinds of assumptions relevant for survival and effectiveness of organizations: externally oriented beliefs regarding how to compete and internally oriented beliefs regarding

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how to manage. Such assumptions are discovered and reinforced through organizational learning and/or culturally transmitted within given industry.

The word "culture" can be applied to any size of social unit that has had the opportunity to learn and stabilize its view of itself and the environment about it (Schein, 1986). At the broadest level we can speak of national cultures and ethnic cultures. We can assume that industries, organizations and professions have their own cultures as well. Within organizations we can find cultures of work groups. Whether a given social unit has a single culture in addition to various subcultures becomes then an empirical question. The problem is to distinguish, within a broader host culture, the features that are common to all subcultures and unique characteristics of particular subculture. For example, in the case of organizational climate James (1982) states that small within organization variance, relative to between organization variance, suggests that averaged perceptions of climate might be a useful concept.

Industry encompasses a group of companies producing similar products or services. The companies working in the same industry face a similar environment they have to adapt. The dimensions of task environment of industries refer to the nature and distribution of resources in environments, with different values in each dimension implying differences in appropriate structures and activity (Aldrich, 1979). Important aspects of task environment for industry are:

1. Technological environment

   One of the most salient similarity among firms in the same industry is their technology. If the organizational culture represents how things are done within an organization (Deal and Kennedy, 1982), the technology determines what is being done. Greater similarity in the content and processes of task completion should be associated with less variation of organizational cultures within the same industry. According to their technology, industries can be classified in three categories (Thomson, 1967): long-linked, intermediate and intensive technology.

2. Economic environment

   This environment refers to the nature of competition in an industry. Several dimensions characterize the nature of competition (Aldrich, 1979): the number and variability of firms in environment, the rate of environmental change, the extent to which environment can sustain growth.

3. Social environment.

   Society determines the rules, norms and laws under which businesses operate. This includes the formal and informal requirements of customers and other social institutions. Many of these rules refer to industries. Companies not observing these rules have troubles with legitimizing their business.

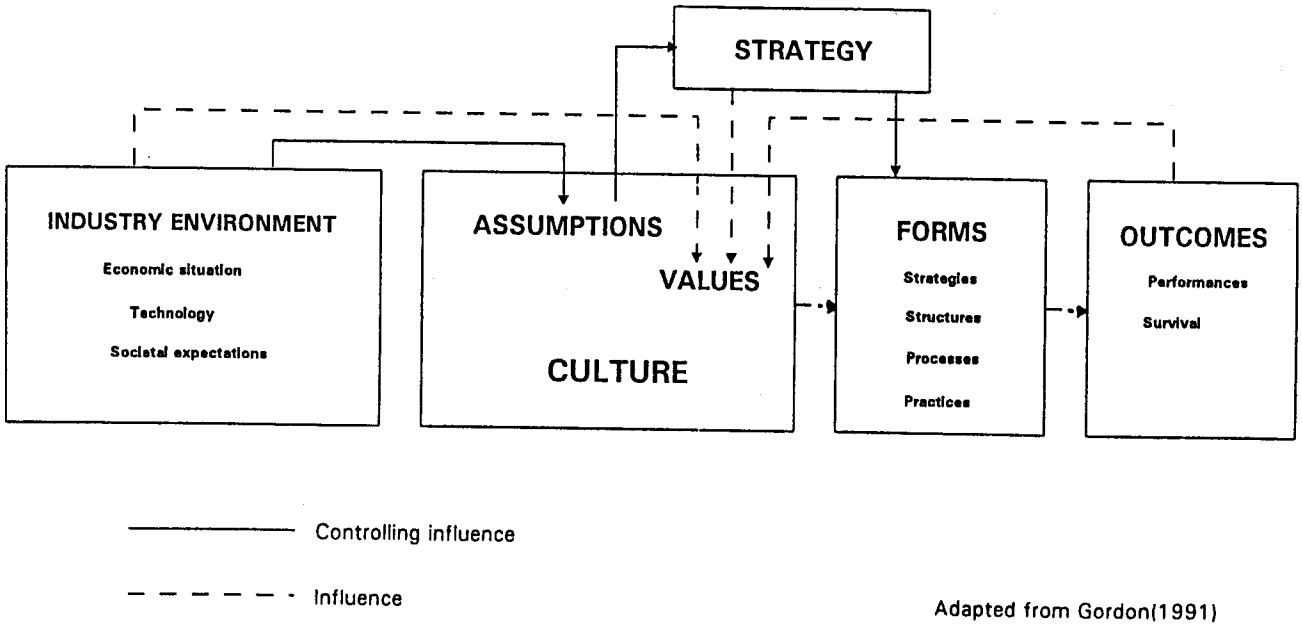

Figure 1. A model of Industry-Driven Culture Formation

The above aspects of industry environment influence the organizations within industry to develop, to some extent, shared cultures. A model of industry-driven formation of organizational culture presented in Figure 1 was adapted from Gordon (1991). According to this model the industry environment determines or selects the elements of organizational culture, that are basic assumptions and values. Formulation of organizational strategy depends to the great extent on these assumptions and values. Weick (1985) draws attention to the points of high correspondences between culture and strategy. Once the corporate strategy is formulated the management tries to develop operations, structures, processes and practices for conducting business. The way how a company is organized and the way people operate within that structure is a very strong determinant and an expression of the company culture. These forms determine internal environment which influences the efficiency of the organization. Perceptions of this environment are often referred as organizational climate (James,1982) which in turn has a feedback on organizational values.

Gordon (1985) found that different industries have developed different cultural patterns to suit their business demands. In those industries requiring stability over time, the dominant values support long tenure, redundancy in decision making, limitations on the ability of individuals to change the procedures, and so on. Companies at the other end of spectrum, that must respond rapidly to changes in tastes, technologies, and competitor's actions, create a different culture. The emphasis here is on the constant drive to keep that company out in front of the competition and the reliance on individuals to perform. As a consequence of these value differences the financial rewards will differ. Short term incentives and high risk compensation packages would certainly be appropriate in dynamic marketplace companies. In utilities and other long term oriented companies, compensation that rewards efforts and promoted stability and long term growth would be more appropriate, both from business and cultural standards.

In this study we compared organizational cultures and climate to assess the extent of variation within and between industries. The hypothesis of industry culture is supported when measures of different cultural orientations vary more across industries than across firms operating in the same industry.

METHOD

Sample

Ten Croatian organizations representing five industries: chemical manufacturing, shipbuilding, food service (restaurant and fast food service), hospital, and bank participated in this study. Two organizations from each industry were included. In each organization a stratified sample of about 50 employees was included. The structure of samples included 10% upper managers, 30% middle managers and 60% operating employees.

Measures

For the measurement of organizational climate and culture the Focus instrument was administered. This instrument was based on competing values approach (Quinn, 1989) and include scales measuring of 4 dimension:

1. Support orientation
   Items refer to combination of internal and flexibility dimension, e.g., human relations, understanding, consideration, mutual trust, etc.
2. Innovation orientation
   Items refer to combination of external and flexibility dimension, e.g., seeking new information in the environment, openness to changes, tolerance for ambiguity, risk taking, etc.
3. Goals orientation
   Items refer to combination of external and control dimension, e.g., rational planing, management by objectives, achievement of results, etc.
4. Rules orientation
   Items refer to combination of internal and control dimension, e.g., security, stability, rationality in procedures, consistency, normalization, etc.

The above cultural orientations were measured in two ways. The first, *descriptive part* of the questionnaire has 40 items measuring the perceived frequency of organizational practices representing each dimension. An example of item measuring goal orientation on descriptive level is: How often has your performance been measured? Respondent has to give his rating on 7 point scale (never to always).

The second, *evaluative part* of the instrument has 37 items that measure the perceived degree to which organizational characteristics (values) representing the above dimension are considered typical for their organization. An example of item measuring goal orientation on evaluative level is: How typical is task orientation to your organization? Respondent has to give his rating on 7 point scale (very untypical to very typical).

More detailed description of rationale and procedure of the development of the Focus questionnaire is presented in De Witte et al. (1995).

It was assumed that two parts of the Focus questionnaire reflect two different although related subjective

sides of organizational life. The descriptive part of the instrument is closer to measures of organizational climate since it emphasizes the perceptions of organizational environment. The evaluative part is closer to measures of organizational culture as it stresses the perceptions of organizational values. This assumption requires some clarification in relation to the problem of differences between organizational culture and organizational climate. Historical roots of the organizational climate research are in Lewinian field theory and are connected more with psychology. Roots of the organizational culture research are in social constructivism and are connected more with anthropology and sociology. These differences are reflected in methodology: climate research uses mainly quantitative survey data, whereas culture research uses more qualitative field observation. New developments in culture research are apparently emulating the same positivist climate model that culture researchers originally deplored. Denison (1996) concludes that these two research traditions should be viewed as differences in interpretation rather then differences in the phenomenon. Both perspectives could be regarded as examining the internal social psychological environment of organizations and the relationship of that environment to individual meaning and organizational adaptation. Clearly Focus methodology follows more closely the quantitative and cognitive tradition prevailing in psychology.

In addition to data connected with organizational culture and climate, an estimation of organizational effectiveness was obtained from respondents. Each subject had to evaluate the effectiveness of his organization compared to other organizations and to insert it in the category of lower, middle or upper third of organizations in the region.

RESULTS AND DISCUSSION

To assess whether the dimensions of organizational culture and climate varied more across than within industries, we conducted first a test of general effects with multivariate analysis of covariance via MANOVA procedure. This technique allows to take into account the following design characteristics: (1) there are two independent variables, organizations and industries, where the former are nested within the latter, (2) eight measures of organizational culture and climate are considered as dependent variables and treated as repeated measures within subject factor, (3) previous research has shown (Konrad, 1994) that perceptions of organizational culture and climate are related to perceptions of organizational effectiveness. For this analysis, that variable was treated as covariate and its effect partialed out.

Table 1

Results of MANOVA with perceived efficiency as covariate

EFFECT: ORGANIZATIONS WITHIN INDUSTRIES

Multivariate Tests of Significance (S = 5, M = 1, N = 254 1/2)

Test Name	Value	Approx. F	Hypoth.DF	ErrorDF	Sig. of F
Pillais	.20800	2.79430	40.00	2575.00	.000
Hotellings	.22367	2.84841	40.00	2547.00	.000
Wilks	.80606	2.82705	40.00	2230.19	.000
Roys	.10284				

EFFECT: BETWEEN INDUSTRIES

Multivariate Tests of Significance (S = 4, M = 1 1/2, N = 254 1/2)

Test Name	Value	Approx. F	Hypoth. DF	Error DF	Sig. of F
Pillais	.26818	4.61717	32.00	2056.00	.000
Hotellings	.33356	5.31090	32.00	2038.00	.000
Wilks	.74218	4.96327	32.00	1886.07	.000
Roys	.22336				

Multivariate tests in Table 1 show that variances across industries and within industries are both highly significant. These results suggest that in general the variances across industries are greater(Wilks lambda =.742) than variances within industries (Wilks lambda =.806).

Additional univariate analyses presented in Table 2 give more details about particular dimensions of organizational culture and climate. Univariate analyses of covariance clearly support the hypothesis of greater variance across industries then within industries for the descriptive and evaluative dimensions of innovation. Descriptive and evaluative dimensions of goals orientation significantly differentiate both industries and organizations within industries. Support and rules orientation significantly differentiate only organizations within industries. Another way to check the hypothesis about greater variance across industries than within industries is to examine the number of significant differences among all involved organization. Post-hoc comparisons with Newman-Keul test (Winer, 1962) confirm that the majority of significant differences among organizations from different industries are found on descriptive and evaluative dimensions of innovation and goals orientation.

Our results suggest that some dimensions are more relevant for discriminating the cultures of industries whereas other dimensions are more appropriate to discriminate the cultures of organizations within industries.

Table 2
Means and univariate analyses

	Descriptive part of questionnaire				Evaluative part of questionnaire			
Oranizations	Support	Innovation	Rules	Goals	Support	Innovation	Rules	Goals
Bank 1	3.01	2.92	3.32	2.71	3.06	3.15	3.81	3.36
Bank 2	2.99	2.84	3.50	2.75	3.17	3.05	3.86	3.30
Food service 1	2.93	3.23	3.01	3.08	3.01	3.04	3.57	3.50
Food service 2	3.41	3.35	3.59	3.40	3.46	3.50	3.95	3.88
Hospital 1	3.21	2.87	3.51	2.89	3.35	2.93	4.03	3.60
Hospital 1	2.94	2.86	3.19	2.70	3.01	3.00	3.59	3.31
Shipbuilding 1	3.01	3.41	3.30	3.12	3.10	3.40	3.79	3.79
Shipbuilding 2	3.13	3.03	3.22	3.02	3.23	3.19	3.61	3.47
Chemical 1	3.16	3.15	3.42	2.86	3.34	3.21	3.79	3.44
Chemical 2	3.41	3.24	3.70	3.19	3.45	3.49	4.16	3.80
p organizations within industries	.000	.104	.000	.003	.001	.069	.000	.001
p between industries	.604	.000	.348	.000	.724	.008	.535	002
Number of significant post-hoc comparisons[a] between organizations from :								
different industries	0	8	5	9	0	8	6	7
same industries	0	0	1	0	0	1	1	1

[a] Significantly different at $p < .05$ by Newman-Keuls test

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This acknowledges the fact that organizational cultures vary also within industry. Idiosyncratic culture of an organization can be the source of sustained competitive advantages if it is valuable, rare, and imperfectly imitable (Barney, 1986)

In the previous analyses the perceived organizational effectiveness was treated as covariate because this variable can blur the distinction of cultures across and within industries. Another possibility is that this variable interacts in a meaningful way, with perceptions of differences between industries. To examine this hypothesis two discriminant analyses were performed, one with the sample of subjects who perceive their organization as efficient and the other with the sample of subject who perceive their organization as inefficient.

Comparing the results of both samples in Table 3 it can be seen that patterns of correlations with the first discriminant function are very similar (exempt for reversed signs). In both cases the combination of the dimensions of innovation and goals orientation differentiate the cultures of industries. That is in line with previous results. The second discriminant function shows different pattern in each sample. With subjects who perceive their organizations as efficient, almost all dimensions of culture and climate contribute to discrimination of industries while with subjects who perceive their organizations as inefficient, only evaluative dimensions of culture contribute to discrimination of industries. The possibility that different aspects of climate and culture are salient for subjects who have different perceptions on overall organizational efficiency deserves further examination.

Table 3
Results of discriminant analyses

	Correlations with discriminant dimensions			
	Analysis A		Analysis B	
Scales	Function 1	Function 2	Function 1	Function 2
D-Support	-.09	.51**	.02	.09
D-Innovation	.47**	.21**	-.36**	-.04
D Rules	-.11*	.51**	.28**	.02
D-Goals	.35**	.65**	-.46**	.10
E-Support	-.08	.32**	.03	.28**
E-Innovation	.26**	.34**	-.13*	-.16**
E-Rules	-.06	.05	.18**	.38**
E-Goals	.38**	.19**	-.19**	.45**
Eigenvalue	.36	.07	.36	.09
% of explained variance	69%	14%	72%	17%
Significance	.000	.024	.000	.012

Note:
Analysis A- subjects who perceive their organization as efficient
Analysis B- subjects who perceive their organization as inefficient
D- descriptive part of questionnaire
E- evaluative part of questionnaire
* p<.05
** p<.01

All performed analyses indicate that most significant discrimination of cultures across industries is achieved through innovation and goal orientation. Centroids of all included organizations on the discriminant functions are presented in Figure 2. On this discriminant dimension no difference between organizations within 5 industries is significant whereas 24 differences from 40 possible comparisons of organizations across industries are significant ($p < .5$ by Newman-Keul test).

According to conceptual model on which our measurements are based (Quinn, 1989), the combination of innovation and goal orientation together is characteristic for an external strategic orientation of organization. From Figure 2 we can conclude that high external focus is the characteristic feature of food processing and shipbuilding industry while higher internal focus is more characteristic for bank, hospital and chemical industry. Taking in to account the small number of organizations included in each industry this conclusion should be verified on a larger sample.

Existence of such an entity as industry culture is important for understanding the dynamic of cultural changes. Cultural changes in organizations do not occur in vacuum. The top managers who are initiators of these changes probably share their belief about industrial environment and strategic issues with managers from other firms within the same industry.

Industry culture is important for new entrepreneurs as well. Those starting a business in an existing industry should take care not to violate too much the existing industry culture. Entrepreneurs starting a completely new venture face the problem of legitimacy in two related senses: (1) how much the new proposed form is taken for granted and (2) how much the new form conforms the accepted rules or standards (Aldrich and Fiol, 1994). From an institutional and ecological perspective, founders of new ventures appear to be fool; for they are navigating, at best, in an institutional vacuum of indifferent munificence and, at worst, in a hostile environment impervious to individual action.

Abrahamson and Fobrum (1994) introduced the concept of macroculture that is similar to the concept of industry culture and distinguished it from the concept of microculture. They argue that prevailing focus of existing studies is put on microculture and proposed to explore

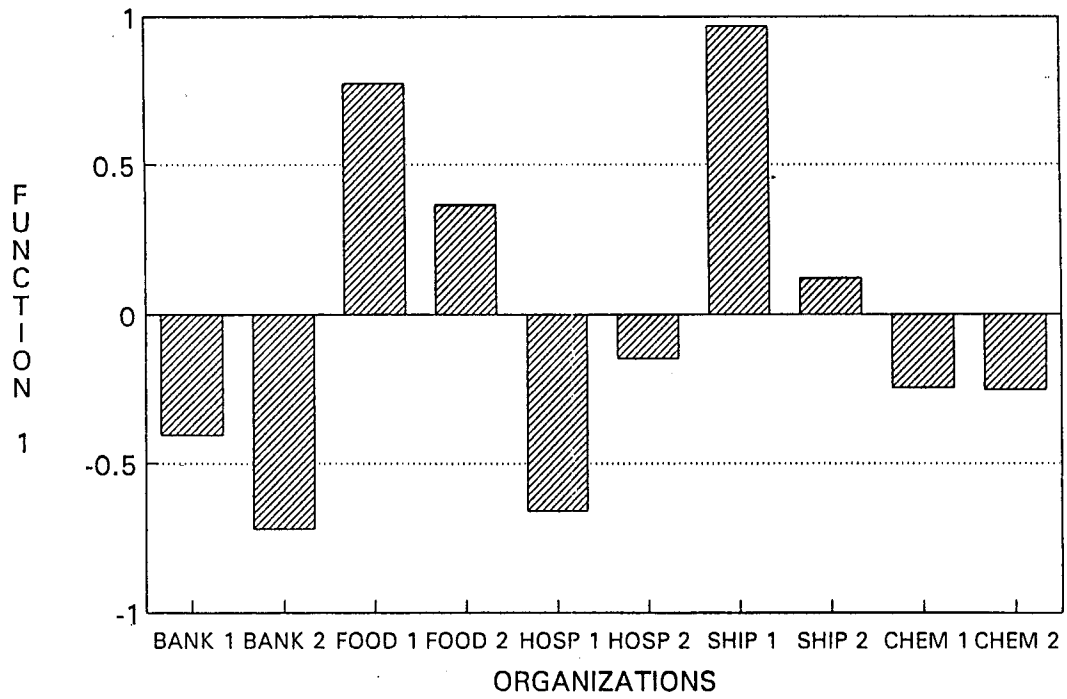

Figure 2. Centroids of organizations on first discriminant dimension

macrocultures, that is, relatively idiosyncratic, organization related beliefs shared among top managers across organizations. These macrocultures influence the strategic inertia, patterns of inventiveness, innovation diffusion and similarity of strategic profile of industries. To approach these topics we need to include additional contents in the measurement of organizational culture. We should examine (a) the beliefs about organizational boundaries, that is, with which organizations the firm competes of cooperate, (b) the beliefs about organizational reputation, that is, the salient evaluative characteristics that are ascribed to own and other organizations and (c) the beliefs about environments, that is, which strategic issues management should attend to and what are the priorities of this issues. Our study included to some extent, the belief about organizational reputation and belief about environment and showed that these beliefs are relevant to industry culture. Additional research on industry culture should improve the existing measures and address the beliefs of organizational boundaries and beliefs about priorities of strategic issues more explicitly. The kind of research presented should be expanded with qualitative studies that will generate rich descriptions of industries that will help a better understanding of their cultures.

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