

Organizational Effectiveness and Management's Public Values: A Canonical Analysis

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Canonical correlation analysis of manufacturing firm data demonstrated that organizational "competence" (executive ratings of organizational performance and executive turnover) was not strongly related to situational variables like organization size, structure, and technology. Instead, "competence" was related primarily to management's values regarding the firm's publics, such as customers, suppliers, employees, and government.

What makes some organizations so much more effective than others? While this certainly is one of the most important questions in organization research today, the literature thus far has provided few consistent answers. The controversy appears to revolve around two related issues—first, what criteria are to be used in assessing organizational effectiveness and, second, what factors in the organization's setting are likely to influence this effectiveness.

This paper introduces a conceptualization of effectiveness—organizational competence—which is not tied to the accomplishment of specific goals and may, therefore, be superior to many earlier constructs in providing some comparability between different organizations as well as different field studies. A new predictor variable also is introduced, one which has not received the attention it deserves in organizational research—that of management's values with respect to the organization's relevant publics. The relationships between organizational competence as the criterion variable and management public values, along with traditional variables such as size, technology, dependence, and structure, as predictor variables, are examined in a field study.

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ORGANIZATIONAL EFFECTIVENESS

The concept of organizational effectiveness is among the most elusive and controversial in the organization theory literature. A major contributor to the controversy appears to be the fact that organizational effectiveness has come to be regarded by many as synonymous with goal attainment (11). The effort by Price (24) to distill some propositions about organizational effectiveness from 50 or so empirical studies illustrates the popularity of this goal model. The indicators of effectiveness summarized by Price all could be interpreted in terms of the accomplishments of goals such as high productivity, morale, conformity, adaptiveness, and institutionalization.

However, most organizations generally are seeking to accomplish several different goals at the same time, and the accomplishment of one of these goals often may inhibit the realization of another. For example, high productivity may well be achieved at the expense of high employee morale or low environmental pollution. Therefore, the goal model of effectiveness raises the possibility that an organization really cannot be effective if it means attainment of all or even most of its goals.

A further difficulty with the goal model is that it has limited use for comparing the relative effectiveness of different organizations, since their salient goals may differ substantially. This may be true even for organizations which seem to have similar goals, such as business firms, some of which, for example, may emphasize profit or sales growth more than others. Perrow (22) makes a useful distinction between an organization's "official" and "operative" goals. Operative goals indicate what the organization is really trying to accomplish, as opposed to its officially stated aims. Any assessment of the organization's effectiveness must focus on its operative goals. Assuming that operative goals can be identified (which may be quite difficult), they will tend to be unique to a given organization. This, of course, would make the comparison of the effectiveness of a number of complex organizations practically impossible.

Yuchtman and Seashore attempt to deal with this problem by abandoning the goal model of organizational effectiveness in favor of a "system-resources" approach. Organizational effectiveness is seen as the "ability of the organization, in either relative or absolute terms, to exploit its environment in the acquisition of scarce and valued resources" (34, p. 898). An application of this approach to a study of 75 insurance sales agencies yielded 10 factors of organizational effectiveness related to resource procurement (29). Several of these factors were specific to the types of organizations examined or to the stage in their cycle of development. Thus this systems-resources approach still does not appear to solve one major problem of the goal model—that effectiveness must be evaluated according to the type of organization being studied.

As Georgiou points out, the "commitment to a goal paradigm" may actually have retarded, rather than aided, organizational analysis. He proposes a "counter-paradigm," based on Barnard's (2) work, which

would focus on the individual participants in the organization who are "exchanging a variety of incentives and pursuing a diversity of goals" (13, p. 291). In this model an organization's effectiveness is considered to be a function of its ability to satisfy the needs of its members by providing incentives which exceed (or are perceived to exceed) their contributions.

On the other hand, some proponents of the goal model might still say that the satisfaction of member needs would simply be one of the organization's multiple goals. Friedlander and Pickle (12, p. 298), for example, suggest that effectiveness measures "must take into account the profitability of the organization, the degree to which it satisfies its members, and the degree to which it is of value to the larger society of which it is a part."

The Concept of Competence

Actually, the concept of organizational effectiveness is difficult to define, and even more difficult to operationalize, without reference to organizational goals. The framework which Georgiou (13) provides is not really appropriate as a gauge of effectiveness per se but, rather, as an index of an organization's "propensity" to be effective. That is, when an organization satisfies its various participants by providing incentives which are seen to exceed their contributions, it establishes the base for effective accomplishment of its goals—whatever these may be. To avoid confusion with the concept of effectiveness, the organization's ability to satisfy its participants might be called organizational competence. Where actual effectiveness is the degree to which the organization attains its goals, organizational competence is its propensity or potential for reaching its various goals.

Since it is not tied to specific goals, this concept of organizational competence, or propensity to be effective, seems to offer some significant advantages over goal-oriented effectiveness measures. The relative competence of different organizations can easily be compared, for example, while any evaluation of their relative effectiveness in reaching different sets of goals would present major problems. Moreover, the relative weight to be assigned to the various goals (such as high profits, sales growth, product quality, employee morale, etc.) is no longer important, since the focus is only on the organization's *potential* for achieving any (or even all) of these various goals.

Predictors of Effectiveness

As mentioned above, there is little consistent agreement in the literature with regard to the factors which predict high or low effectiveness for an organization. Again, the use of the goal model may have a great deal to do with this controversy. Different factors are likely to predict effectiveness in achieving goals such as high employee morale or low turnover from those predicting accomplishment of goals such as high productivity or sales growth.

Nevertheless, although different studies have yielded different individual predictors, some agreement seems to have emerged that certain factors

which define the organization's setting or environment, and its internal structure, should be considered as potential contributors to (or detractors from) organizational effectiveness. For example, Price (24) and Hall (17) have recently summarized a number of empirical studies suggesting that organizational performance may depend on such structural and situational factors as the degree of specialization (or division of labor), formalization of rules, the degree of autonomy (or decentralization), and the type of production technology.

Management Values

It is logical, of course, to expect an organization's structure and situation to have an impact on its performance, or on its potential for performing well. However, it also seems reasonable to expect the actions of management, based on its perceptions of situational and structural constraints, to have a great deal to do with the organization's chances for success. For example, Chandler's (6) longitudinal study of large scale American business enterprises suggests that organizational performance may be strongly influenced by the strategic choices made by top executives. Child (7) points out that the most influential models of organization seem to ignore the potential impact of the "agency of choice" by the organization's top decision makers. He feels that this strategic choice influences decisions regarding organization structures, the manipulation of environmental features, and the selection of relevant performance standards (or goals).

This strategic choice variable would be difficult to operationalize in the context of a cross-sectional study; however, a major related factor influencing managerial decision making can be measured. Guth and Tagiuri (15) show that top executives' value systems may play a major role in the critical choices they make and may, therefore, have a strong influence on their organization's performance. Steiner also suggests that a business firm has a "unique value system" which "constitutes the fundamental driving force in each business and may be more important in its success than its material assets" (31, pp. 121-122). Of particular importance would be the business executives' values with respect to the publics with whom their organization must deal. Likert, for example, suggests that an important variable determining the course of developments in a business organization is "its management's philosophy, policy, and values with respect to employees, customers, the public, unions, suppliers, and others" (19, p. 212).

Negandhi and Prasad provide one of the earliest attempts to examine empirically the relationship between the public values of an organization's executives and its structure and performance. They define the firm's "management philosophy" as the "implied and expressed attitudes of the managers toward consumers, employees, stockholders, suppliers, distributors, government, and community" (20, p. 21). In a study of 30 Indian business firms, Negandhi and Prasad measured management philosophy on the basis of extensive interviews with middle to top level executives in each firm.

A given executive's philosophy score was a weighted average of his expressed attitudes toward the seven agents, or publics, of his firm. The firm's management philosophy score was the arithmetic average of the scores of its executives (20).

Negandhi and Prasad found that their management philosophy variable was very strongly associated with a number of organizational variables. For example, the more positive or "progressive" their management philosophies, the more decentralized and the more effective (in both financial and behavioral terms) the firms appeared to be (20). Negandhi and Prasad interpreted their finding as suggesting that a progressive management attitude toward its important publics or "task environmental agents" is more likely to result in high organizational effectiveness than is a nonprogressive attitude (or a low score on management philosophy), at least in the context of a developing country.

A cross-sectional study like Negandhi and Prasad's (and the bulk of the other research on predictors of organizational effectiveness) cannot establish the direction of causality. However, a recent longitudinal study of 16 health and welfare agencies by Hage and Dewar (16), provides evidence supporting Negandhi and Prasad's causal interpretations. Hage and Dewar measured the values of high ranking or elite members of the organization, along with structural variables similar to the ones used in the present study—complexity (similar to specialization), centralization, and formalization. They report that elite values were the best predictors of organizational performance in terms of the number of new programs introduced over the following three years. A major conclusion of their research is that the values of an organization's elite inner circle may "largely, though not completely, determine organizational policy" (16, pp. 287-288).

THE STUDY

The research summarized above suggests that managerial values with respect to the organization's publics may be an important, though neglected, variable for predicting the organization's potential effectiveness. The field study reported here was designed to establish the importance of the public values variable in relation to more traditional structural and situational predictors of organizational performance.

Sample and Method

The sample for this study consisted of 19 American manufacturers ranging in size from about 200 to 4,000 employees and competing in a variety of industries. Data on organization structure, effectiveness, and situational variables were gathered from interviews with the top level executives in each organization (4 to 10 executives, depending on the size of the firm) and by consulting available company documents such as organization charts, standard operating procedures, and policy manuals. The public values

scores were obtained by means of a semantic differential questionnaire administered to these top level executives. The operationalization of all variables is described below.

Organizational Competence

The dependent variable of organizational competence was conceptualized as the degree of satisfaction of the members with the way the organization accomplishes a wide variety of goals—financial as well as social—in comparison with other organizations they might have joined. The participants whose satisfaction would be most relevant here would be the organization's elite, or its high-ranking executives, who typically are the most mobile members of the organization since they are most likely to leave the organization in search of better opportunities if not satisfied. These executives' mobility, as well as their active role in goal-setting, puts them in an excellent position to judge their organization's performance in relation to its peers.

Two indicators of executives' satisfaction with their organizations' effectiveness were used in this study: (a) executive turnover, and (b) executive ratings of their firms' performance.

1. *Executive turnover* was determined by asking all top level executives how many of their group had left the firm voluntarily over the past two years. Their answers were corroborated whenever possible by consulting personnel records. Differences in answers between executives were reconciled and the number expressed as an annual percentage of the total number of executives considered in calculating the turnover rate. These differences generally were due to memory lapses on the part of one or more executives, or an occasional misunderstanding about the size of the group of executives included. This group was defined by the researcher to include all of the organization's key executives, and it could encompass the top two or three levels of management and anywhere from 12 to 40 executives, depending on the organization's size and structural makeup. (The turnover rate actually varied from 0 to 11 percent, with eight firms having experienced no executive turnover at all.)

2. *Performance rating* by the group of top executives was an attempt to assess executive perceptions of their organization's success in accomplishing a number of relevant business goals. Executives were asked to rate their firm's performance relative to competitors, on a scale of 0 to 100 percent, on the following eight goals:

- (a) Profit growth in the last five years
- (b) Sales growth in the last five years
- (c) Attraction and retention of high quality manpower
- (d) Product quality
- (e) Customer service
- (f) Employee job satisfaction and morale

- (g) Potential for growth
- (h) Competitive strength

These eight goals were not intended to be exhaustive, but simply representative of a variety of goals likely to be important to business firms. Most of the 140 executives interviewed in the study indicated that they felt this to be a fairly good and comprehensive list of goals.

The internal consistency of the executive ratings of the eight goals was relatively good (Kendall's coefficient of concordance was 0.385—significant beyond the .001 level); therefore, all eight scores were combined (averaged) to yield a single rating for each executive. To obtain an overall score for each firm, the ratings of its group of executives (which generally were fairly close to one another) were averaged.

Situational Variables

A great many factors in the organization's situation may affect its performance, and any comparative study with a small sample of organizations can focus on only a few. Among the situational variables most commonly identified as important to organizations are size, dependence, and technology. The Aston group (25), for example, found all three of these variables to be related to various aspects of organization structure. Woodward (33) found that the type of structure chosen by organizations with various process technologies from unit to mass to continuous production was related to their performance. A similar finding is reported by Burns and Stalker (5) with respect to the degree of change in the organization's technological and market environment.

In this study three situational variables were operationalized as follows:

1. *Organization size* was the total number of full time employees of the organizational unit. The logarithm of this number was used to make the distribution more nearly normal.

2. *Dependence* of the organization on other, higher authority, organizations was assessed by means of the Aston group's abbreviated scales (18). These scales take into consideration (a) the impersonality of origin (i.e., was the firm founded by a person or by a corporation), (b) its status (branch plant, headquarters, etc.), (c) the public accountability of the ultimate owners (i.e., to government or shareholders), and (d) the size of the organizational unit relative to the total or parent organization. Scores vary from two points (relatively independent) to six (relatively dependent).

3. *Technical change* was the average rate of change in the productivity of the organization over the previous 12 years. This measure was used by Pfeffer and Leblebici (23) as an index of technical change. It is also similar to Burns and Stalker's (5) rate of technological innovation. This measure was used, rather than Woodward's (33), since it was virtually impossible to apply her classification to the process technologies of the firms in this study. Most used a mixture of unit, mass, or continuous process manufacture and

could not be classified in any single category. Furthermore, the rate of technical change provided a continuous variable which could be readily determined once the firm's major product lines had been identified.

Rates of productivity change for 1958-1969 are available by four-digit S.I.C. classification (4, 30). Each firm's score on technical change was an unweighted average of the rates of productivity change of the S.I.C. industry classification(s) of its major product line(s).

Structural Variables

Organization structure was measured along three basic dimensions isolated by a combination of factor and cluster analyses of 11 structural scales (26). The three dimensions of bureaucratic structure and their defining scales were as follows:

1. The *Centralization* dimension was based on the following two measures:

(a) *Delegation of authority* was the percentage of decisions the chief executive of the organization delegated to his subordinates. Each executive was asked which decisions, from a specific list of 23 typical management decisions, he had authority to make. Then he was asked to indicate which of these decisions he delegated to his subordinates. Most of his immediate subordinates similarly were questioned to corroborate his answers.

(b) The *Centralization index*, based on the work of Negandhi and Prasad (20), was a function of (a) the locus of decision making with respect to major and specific functional (i.e., marketing, production, etc.) policies; (b) the degree of information sharing between levels; and (c) the degree of participation in long range planning.

The score on the centralization dimension was the average of the firms' rankings on the two measures described above. (The delegation ranks were reversed.)

2. The *Specialization* dimension was defined by the following three scales:

(a) *Number of levels* in the hierarchy from the bottom to the top (inclusive).

(b) *Functional specialization* was the number of specialties, from a specific list, which were performed by at least one specialist. The list included 17 functions such as advertising, market research, employee training and development, quality control, maintenance, and transportation. Each function represented was awarded one point, so that the organization's maximum score was seventeen points.

(c) *Professionalization* was the degree to which highly specialized requirements were spelled out in formal job descriptions for various functions. This was intended as an indicator of the degree of technical competence required for employee selection. The score on professionalization was the proportion of the organization's individual jobs for which a formal job requirement specified at least four years of training.

The specialization score was the average of the rankings on the above three scales.

3. The *Formalization* dimension was a combination of the following two measures:

(a) The *formalization of role definition* was a function of the extent to which the employee's role was defined by various formal documents, such as information booklets, organization charts, job descriptions, policy manuals, and the like.

(b) *Lack of autonomy* was a measure of the degree to which top management had to refer certain typical decisions to a higher level of authority outside the organization. The list of typical decisions was the same as that used for the delegation of authority measure.

The score for the formalization dimension was the average of the rankings on the above two scales. Increasing scores for centralization, specialization, or formalization indicated increasing degrees of bureaucratic structure along these three dimensions. Details on the above structural measures can be found in Reimann (26).

Management's Public Values

A questionnaire based on Osgood's (21) Semantic Differential (SD) was used to assess executive's public values. England (10) has demonstrated that the personal value systems of managers can be effectively measured by the SD technique. Moreover, a paper and pencil questionnaire like the SD was expected to be considerably more reliable than the interview technique employed by Negandhi and Prasad (20) to measure the values, or philosophies, of their Indian managers.

Several pretests with business executives, as well as college students, were made in the development of the Public Values Questionnaire used in this study. The details of these pretests have been published elsewhere (28) and essentially confirmed Osgood's (21) claims for the reliability and (face) validity of the SD technique.

Managers were asked to rate each of the nine publics and seven reference concepts on ten bipolar adjectives. The publics chosen as being the most vital to the modern American business firm were: (a) the national government, (b) the supplier, (c) the consumer, (d) the community, (e) the stockholder, (f) the creditor, and (g) the employee. The competitor and labor union also were on the questionnaire, but the value scores for these publics were either negatively or very weakly related to those of the other seven publics and therefore were excluded from this study. (Negandhi and Prasad (20) did not include these two publics either.) Also some reference concepts such as "friend" and "enemy" were included to check for response bias in this study.

Five of the ten bipolar adjective scales measured the evaluative dimension of meaning (e.g., friendly-unfriendly), and the other five measured the dynamism dimension (e.g., fast-slow or strong-weak). The evaluative scales

provided an index of the attitudes of respondents toward the stimulus concepts. The dynamism scales, on the other hand, were indicative of the extent to which a given stimulus concept was perceived as being dynamic, or forceful and quick (21).

The scores on each of the two dimensions of each manager's public values (evaluation and dynamism) were obtained by summing the values of the appropriate five bipolar adjective scales. The numerical scale values varied from one point for the most negative end of the scale to seven points for the most positive end. The public value scores on either dimension have a maximum possible range of from five points (most negative) to thirty-five points (most positive).

As has been demonstrated elsewhere (27), the SD questionnaire was able to differentiate effectively between the public values of the top management groups of the different firms in this study. That is, the variation among the public values of different firms (averaged over the members of their management teams) exceeded to a substantial degree the variation among the managers within any one firm. Moreover, such differences were not observed for the reference concepts. This finding suggested that each firm (or type of firm) may well have a public value system or philosophy which is unique to its group of top decision makers (27). Therefore, the scores of the individual managers in each firm were averaged to obtain the firms' scores on the two dimensions of (a) evaluative and (b) dynamic public values for each of the seven publics.

Although the evaluative and dynamism of dimensions of a respondent's "meaning space" (21) are theoretically independent, they were positively correlated for each of the seven publics in this study. Therefore, the scores on the two dimensions were combined (added) to yield each firm's overall public value scores, which could vary from a minimum of 10 to a maximum of 70 points.

These value scores then represented the degree to which each public was (a) evaluated in positive terms (friendly, loyal, etc.), as well as (b) considered to be dynamic (effective, fast, etc.), by each firm's group of top or elite decision makers. For further details on the scales, etc., of the SD questionnaire, see Reimann (27).

Negandhi and Prasad (20) computed a weighted average of the management philosophy scores for their seven individual publics to arrive at a single, overall management philosophy score for each firm. Since the value scores for the individual publics all were fairly strongly, and positively, correlated in the present study, a similar overall public value score also was computed by simply averaging all seven individual public scores for each firm.

RESULTS

Since some of the measures used in this study had, at best, ordinal rather than interval scales and somewhat skewed rather than normal distributions,

TABLE 1
Correlations with Effectiveness Criteria

	<i>Executive Turnover</i>	<i>Performance Rating</i>
<i>Public Values</i>		
National government	-.42	.49*
Suppliers	-.63**	.53*
Customers	-.56*	.42
Community	-.45*	.00
Stockholders	-.30	.22
Creditors	-.40	.50*
Employees	-.41	.69**
Overall	-.65**	.57**
<i>Structure</i>		
Centralization	.42	-.13
Specialization	.16	.05
Formalization	.28	-.35
<i>Situation</i>		
Size	-.16	-.01
Dependence	.43	-.34
Technical change	-.19	.32

* $p < .05$

** $p < .01$

nonparametric analyses might be safer than would the more traditional parametric techniques. However, since the rank-order and product-moment correlation coefficients among all variables were found to be very similar, it was decided to use the more powerful and versatile parametric tests for the analysis of the results of this study.

The product moment correlation coefficients between the two effectiveness criteria and the rest of the variables are shown in Table 1. As may be seen from these correlation coefficients, the public value scores for all seven publics were negatively related to executive turnover, with three publics (suppliers, customers, and the community) reaching the .05 level of significance or better. (Since the sample of firms studied was not random in any sense, statistical hypothesis testing was not used with the usual purpose of generalizing to some population of organizations. Rather it was used to determine which of the observed relationships were strong enough not to have been likely to occur by chance alone.)

All public value scores except for the community were positively related to the organizational competence index, with four reaching significance (government, suppliers, creditors, and employees). However, none of the structural or situational variables were significantly related to either criterion of effectiveness—with only two coming close (i.e., the .10 level), namely centralization and dependence (see Table 3).

It should be noted that the major difference in the way the two effectiveness criteria were related to the public value scores was found for the community. Possibly this reflects the fact that if the plant community is held in relatively high esteem, executives are somewhat less likely to leave, other

things being equal. On the other hand, the executives' attitudes toward their community had little to do with their perception of their firm's relative performance or goal attainment.

It would be difficult, if not impossible, to analyze the multiple interrelationships among 13 variables with a sample of only 19 firms. In the interest of parsimony, therefore, only the overall public value score was used in the multivariate analyses—thus reducing the number of variables to seven. Very little was lost in this data reduction, since the individual value scores for the seven publics were highly intercorrelated. Also, as may be seen from Table 3, the overall public value scores were significantly related to both effectiveness measures.

The correlations between the seven remaining variables are shown in Table 2. In addition to the correlations already discussed, three relationships among the independent variables reached the .05 level of significance. Dependence was very strongly related to formalization, size to specialization, and centralization to public values.

Canonical Correlation

Since the objective of the data analysis was to sort out the multiple relationships between five predictor variables and two criterion variables, the statistical technique of canonical correlation seemed to be an appropriate analytical tool. This technique has not seen a great deal of use in organization research, but recently has become quite popular in marketing research (1).

Multiple linear regression on each of the two effectiveness indicators was also tried. The results essentially paralleled the canonical analysis. Discriminant analysis also was used for the executive turnover variable to discriminate between firms with zero turnover and the others. Again, the results

TABLE 2
Matrix of Correlation Coefficients

	1	2	3	4	5	6	7	8
1. Executive turnover	—							
2. Performance rating	-.22	—						
3. Centralization	.42	-.13	—					
4. Specialization	.16	.05	-.19	—				
5. Formalization	.28	-.35	.08	-.02	—			
6. Size (log)	-.16	-.01	-.03	.60**	-.36	—		
7. Dependence	.43	-.34	.14	-.12	.81**	-.29	—	
8. Technical change	-.19	.32	-.16	.16	-.36	.26	-.35	—
9. Public values	-.65**	.57**	-.53*	-.12	-.23	.17	-.22	.30

* $p < .05$

** $p < .01$

were in general agreement with those of the canonical analysis in that the public values variable was by far the most important in the linear discriminant function.

Essentially, canonical analysis establishes two sets of weighting coefficients (a set for the criterion variables and a set for the predictor variables) such that if linear variates (or canonical factors) were formed of each set of variables, these variates would be more highly correlated than would any other pair of linear compounds that could be formed. This technique is similar to factor analysis in that a large number of relationships is reduced to a smaller number of factors. However, where the factor model establishes orthogonal factors, each of which accounts for a maximum amount of the variance among variables in one domain, the canonical model establishes orthogonal factor *pairs*, each of which accounts for a maximum amount of the covariance between the respective sets of variables in two different domains (9).

The results of the canonical analysis are shown in Table 3. Only the first canonical correlation was significant; therefore, no attempt will be made to interpret the meaning of the second. The first canonical correlation of 0.918 indicates that about 84.2 percent of the variance in the criterion factor was explained by the predictor factor—significant at the .01 level. This, of course, represents the optimal relationship between linear combinations of the two sets of variables.

TABLE 3
Canonical Correlations ^a

Canonical Factor No.	Canonical Correlation	Chi Square	Degrees of Freedom	Level of Significance
1	.918	30.87	14	.0059
2	.550	5.05	6	.5388

Factor Loadings ^b

	Factor 1	Factor 2
<i>"Criterion" Variable Set</i>		
Executive turnover	-.937	.349
Performance rating	<u>.545</u>	<u>.838</u>
<i>"Predictor" Variable Set</i>		
Public values	<u>.831</u>	.340
Centralization	-.442	-.191
Specialization	-.131	.256
Formalization	-.400	-.322
Size	.144	-.178
Dependence	-.538	-.158
Technical change	<u>.303</u>	.356

^a Computations by SAS CANCERR Procedure (3).

^b Correlation between variables and factors—loadings greater than .50 underlined.

The "redundancy" measures between the two sets of variables give a less inflated picture of the overall relationships between the variables, themselves. The redundancy of the criterion set, given the predictor set, was 0.57; the redundancy of the predictor set, given the criterion set, was 0.20. These redundancies show that a fair proportion of the variance in each set of individual variables was explained by the other set's canonical variates (1, 32).

In order to interpret the meanings of the criterion and predictor factors in this canonical relationship, the factor loadings or correlations between the original variables in each set and their respective canonical factors may be examined (see Table 3). These factor loadings are superior to the "weighting coefficients" since the latter suffer from the same difficulty as do their equivalent "beta coefficients" in multiple linear regression—that of multicollinearity when two or more variables in either set are highly correlated (1). As pointed out earlier, several of the independent variables were significantly correlated (Table 2).

The factor loadings suggest that the criterion factor was a function of decreasing executive turnover and (to a lesser degree) increasing executive performance ratings. Although the two measures of organizational competence were not, themselves, at all strongly related ($r = -.22$), they both loaded fairly strongly on their canonical factor. This factor, therefore, seems to be a good overall indicator of the organization's competence in terms of keeping its key executives satisfied.

Moreover, the predictor factor loadings suggest that organizational competence was strongly related to the executives' public values and, to a much lesser extent, to dependence. These results reinforce the conclusions from the zero-order correlations shown in Table 1, in that public values were by far the most strongly related to both indicators of organizational competence among all the independent variables considered in this study.

In summary, these results suggest that organizational competence increased with increasingly positive public values of the organization's decision makers, and with decreasing dependence on other (higher authority) organizations.

DISCUSSION AND IMPLICATIONS

One somewhat surprising result of this study is that none of the situational or structural variables were very strongly related to organizational competence. Only the dependence of the organization came close to being significantly related to competence. However, it is worth noting that, while not as strong as might have been expected, this relationship was in the expected direction. Increasing autonomy of decision making is considered to have a positive influence on organizational performance—especially performance in social terms such as turnover and morale (17, 19, 24). The dependence measure indicates the relative autonomy of the

organization unit—the less the dependence on higher authority organizations, the greater the autonomy of the unit's executives.

The loadings on two of the structural dimensions—centralization and formalization—while relatively weak, also were in the negative direction to be expected from previous research. Decreasing centralization and formalization also mean increasing autonomy of executives with respect to the internal structure of the organization and, therefore, these measures would be expected to load negatively, along with dependence, on the organizational competence factor. (See Table 3.)

Thus previous results with respect to the relationship between situational and structural variables and organizational effectiveness were only modestly supported in the present research. However, the public values of management were found to be considerably stronger predictors of organizational effectiveness (or competence, as conceptualized in this study) than either situational variables like size, dependence, and rate of technical change, or structural variables like centralization, specialization, and formalization.

This result strongly supports the findings of Negandhi and Prasad (20) of a strong positive correlation between organizational effectiveness and management values or philosophies with respect to the organization's publics.

Nevertheless, the results of this study must be interpreted with care, particularly in view of the way in which effectiveness was conceptualized. Organizational effectiveness or competence was essentially a function of the degree to which the high ranking decision makers valued their organizations—that is, the degree to which they were satisfied with the relative performance of their organizations in terms of achieving a set of typical goals (profit and sales growth, product quality, employee satisfaction, etc.), and in terms of their own job satisfaction (executive turnover). It is quite possible, therefore, that their value judgments about the organization's various publics may have been influenced by their feelings about their own organization's relative effectiveness. The more they valued their own organization, the more they might tend to value its various publics. That is, the strong positive relationships found between organizational competence and managers' public values may reflect, in part at least, the operation of a variation of the halo effect.

On the other hand, research has indicated that member perceptions of their organization's relative performance may be strongly related to performance assessments made by objective raters outside the organization (8, 14). For the six independent firms in the present study which were willing and/or able to provide accurate financial data, actual growth in sales and profits for the previous five years were positively and significantly associated with executive self-ratings for these indicators. Moreover, in Negandhi and Prasad's (20) research, management's values or philosophy with respect to their publics were strongly associated with actual performance indicators such as profit and sales growth, absenteeism, turnover, and employee morale.

These findings suggest that the public values of the top decision makers may well be strongly related to organization effectiveness in objective terms like profitability. However, as mentioned previously, cross-sectional studies cannot establish the causal direction of the relationships discovered. For example, it could be argued that executives in a relatively effective firm may view the firm's various publics in relatively positive terms simply because they feel that these publics have contributed to this effectiveness. Executives in relatively low performing firms, by the same token, would then tend to view their publics in a less favorable light.

Nevertheless, it appears at least as logical to argue that executives' values will influence their strategies for dealing with various publics. These strategies, in turn, can influence the organization's effectiveness in satisfying the needs of the publics on which it depends for survival and growth. The arguments of Guth and Tagiuri (15), Child (7), and Steiner (31), summarized earlier, would certainly favor the above interpretation. The historical case study of corporate enterprises by Chandler (6) also implies that organizational performance is a consequence of its executives' strategic choices and thus of their value systems, rather than the reverse. And, finally, the longitudinal study by Hage and Dewar (16) strongly suggests the possibility that the values of organizational elites, such as executives, may have a substantial impact on organizational performance in terms of the relative innovativeness of health and welfare agencies.

It appears, therefore, that empirical evidence tends to support the interpretation that the public values of the organization's elite decision makers can exert considerable influence on organizational performance, and not the reverse. However, considerably more research is needed before one can hope to do much more than speculate about the influence executive value systems may exert on organizational performance—whether it be potential (competence) or actual (in terms of goal achievement). The exploratory research reported in this paper should be extended in at least two directions—laterally and longitudinally. A lateral extension to include many more organizations would be desirable from the standpoint of generalization, and a longitudinal study could be helpful in establishing the likely causal linkage between executive public values and organizational effectiveness.

A primary reason that longitudinal field studies of organizations are so rare may well be that they tend to be substantially more difficult and costly to carry out than equivalent cross-sectional designs. In the present case, for example, readings of executive public values, organizational effectiveness, and other relevant variables would have to be taken at two or, preferably, several points in time. During this time, however, a great many changes are likely to occur, especially if the time period covered is long enough to be meaningful. One of the most likely and most serious of these changes would be the turnover among the executives being questioned. To gain any kind of control over the possible effects of such changes, a relatively large sample of organizations would be required. Also, a mass mailing of questionnaires would not be satisfactory, since some personal contact between researcher

and subject is necessary for reliable data collection, especially when several time periods are to be sampled. As a result, longitudinal designs appear doomed to be extremely costly as well as time consuming. Nevertheless, organization research is at a point where longitudinal designs are becoming increasingly necessary to put predictive models based on purely cross-sectional designs, as is the case in the present study, to the test of time.

Another shortcoming of the present research is that the size and restricted nature of the sample (manufacturing firms only) precludes any kind of generalization. Before any valid implications for organization theory can be drawn from this research, replications with larger samples and with different kinds of organizations appear to be needed. Obviously some modifications of the measures used in this study would be necessary for replication in different kinds of organizations. For example, the list of relevant publics in the public values questionnaire would have to be changed according to the type of organization studied (hospital, university, prison, government agency, etc.). Similar modifications may be required in the list of possible goals for executive performance ratings. If possible, it would also be desirable to obtain some objective indicators of performance appropriate for the organizations studied, such as productivity data or some sort of performance ratings, by qualified judges outside the organization.

However, while much remains to be done, the study described in this paper has provided some preliminary empirical evidence that the values of key decision makers with respect to their organizational publics may have much to do with how satisfied they are with their organization's performance. Moreover, some research instruments have been provided which, hopefully, will enable other researchers to attempt replications of this study both laterally, with different kinds of organizations, and longitudinally, over time.

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