

A Contingency Theory of Organization Re-Examined in the Context of a Developing Country

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The "Contingency Theory" of organizations holds that the "optimum" organization structure is primarily dependent on the external environment of the enterprise. Stable environmental conditions call for centralized structures, while a dynamic environment requires a decentralized structure. This study suggests that a slightly modified version of this "Contingency Theory" is appropriate in the context of a developing country; namely, India.

INTRODUCTION

In the current studies of complex organizations, one basic theoretical perspective is emerging: an organization's structure and functioning are dependent on its interface with the external environment.

Research studies of Dill [3, pp. 409-443], Woodward [12, pp. 3-7], Burns and Stalker [1], Chandler [2], Lefton and Rosengren [8, pp. 802-810], Foulker and Stopford [4], and Lawrence and Lorsch [7], to name a few, have particularly raised the question of environmental impact on organizational structure and functioning.

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Dill, for example, in his study of two Norwegian firms, indicated that executives operating in relatively dynamic environments had more autonomy (or at least perceived that they did) than those operating in relatively stable environments [3, pp. 409-443]. Although not directly couched in environmental terms, Woodward, in her study of industrial firms in South Essex, found a relationship between the number of levels in the hierarchy and the degree of predictability of production techniques [12]. Burns and Stalker examined how the management patterns in some 20 industrial firms in the United Kingdom were related to certain aspects of their external environments [1]. The specific environmental characteristics considered were the rates of change in the scientific techniques and markets of the selected industries. They found two distinctly different sets of management practices and procedures, which they classified as "mechanistic" and "organic." The "mechanistic" organizations consisted of highly centralized, bureaucratic structures, while the more flexible and decentralized "organic" organizations practiced many of the principles espoused by the proponents of the "human relations" movement [11]. Burns' and Stalker's conclusion was that the "mechanistic" form of organization appeared to be most appropriate under relatively stable environmental conditions, while the "organic" form seemed best suited to conditions of change.

Finally, the recent study of Lawrence and Lorsch indicated that the formality of the effective organization's structure was related to the degree of certainty and stability of its market and technological environments [7]. Successful firms operating in relatively dynamic environments tended to be decentralized, while those facing more stable environments were relatively centralized. On the basis of their results, Lawrence and Lorsch proposed a "contingency theory" of organization [7]. This theory regards the "optimum" organization form as contingent on the demands of the organization's environment. These authors further proposed that decentralization under stable environmental conditions and centralization under dynamic conditions may actually be dysfunctional. In other words, they argued that an organization must establish a "fit" between its internal structural arrangements and its external environmental demands.

PURPOSE OF THIS STUDY

The purpose of this study was to test the "contingency theory of organizations" proposed by the above researchers, and, particularly, the thesis advanced by Lawrence and Lorsch in the context of a developing country; namely, India [7].

The relevance of testing this theory in such a context becomes apparent when one examines the assertions made by many cross-cultural management researchers. For example, in the cross-cultural studies of

Meade [9], Meade and Whittaker [10, pp. 3-7], Harbison and Myers [6], and Haire, Ghiselli, and Porter [5], to name a few, there seems to be an underlying theme that sociocultural variables exert considerable influence on the organization structure of industrial enterprises in developing countries. In particular, the consensus of these researchers is that decentralized structure is dysfunctional in terms of the effectiveness of industrial enterprises in those countries. Wright, for one, recently made such an assertion with respect to American firms in Chile [13].

We make no claim that the simple testing of the contingency theory of organizations in a single developing country can provide the final answer to the suitability of decentralized structure in developing countries. Nevertheless, we hope our findings may throw some additional light on the impact of "other" environmental factors (other than sociocultural variables, which are exceedingly difficult to operationalize) on organization structure.

More specifically, we explored the impact of decentralization on organizational effectiveness of the firms under differing market conditions.

Sample

Data¹ for this study were collected from 30 manufacturing firms in India through personal interviews with various levels of personnel in each company and by consulting published materials. The companies studied represented various industrial categories, such as pharmaceutical, chemical, soft drinks, elevators, heavy machine tools, cosmetics, sewing machines, and typewriters.² Size, as measured by the total number of employees of these companies, varied from 120 employees to 6,500 employees.³

VARIABLES AND MEASURES

Degree of Market Competition

The following information was collected to determine the extent of market competition faced by a given firm:

- (a) The degree of price competition among manufacturers of similar products,
- (b) The degree of delay in securing a product,
- (c) The number of alternatives available to the consumer.

¹ This sample was drawn from a larger study undertaken in Argentina, Brazil, India, the Philippines, and Uruguay. See A. R. Negandhi and S. B. Prasad *Comparative Management* (New York: Appleton-Century-Crofts, 1971).

² The firms in our sample were divided according to Woodward's technological classifications of process-, mass-, and unit-production. A comparison of decentralization indexes for these firms by the Kruskal-Wallis test showed no significant differences in decentralization among the three technological classifications.

³ The effect of size was controlled in our analysis by the use of partial correlation (see analysis of data).

On the basis of this information, the following three descriptive categories were created to represent the different degrees of market competition in which the various firms in our sample were operating:

- (1) Highly competitive market,
- (2) Moderately competitive market,
- (3) Seller's market, or noncompetitive market.

Firms operating in a "highly competitive market" faced severe price competition from other manufacturers of similar products. At the same time, the consumer did not experience any delay in securing the needed product (the product could be picked from the shelves), and the number of alternatives available to the consumer varied from five to twenty. Firms in this category manufactured pharmaceutical products, sewing machines, and soft drinks.

Firms operating in a "moderately competitive market" experienced little price competition, but there was no delay in securing the product, and the consumer had two to four substitutable products available in the same market place. Firms facing this market condition were manufacturing cosmetics, electric bulbs, and canned products.

Firms operating in a "seller's market" experienced no price competition; the consumer (in most cases industrial consumers) had to wait for 6 months to 2 years to secure the product, and there were no real alternatives available to him. Firms operating in this market condition were manufacturing automobiles, trucks, and heavy industrial machinery.

Decentralization in Decision-Making

Nine factors were examined to evaluate the degree of decentralization in decision-making observed in the companies studied. The factors examined were:

- (1) Layers of hierarchy—from top executive to blue collar worker;
- (2) Locus of decision-making with respect to major policies (e.g. mergers, major expansions or suspensions, major diversification decisions);
- (3) Locus of decision-making with respect to sales policies;
- (4) Locus of decision-making with respect to product mix;
- (5) Locus of decision-making with respect to standard-setting in production;
- (6) Locus of decision-making with respect to manpower policies;
- (7) Locus of decision-making with respect to selection of executives;
- (8) The degree of participation in long-range planning,
- (9) The degree of information-sharing.

Decentralization Index

To arrive at a composite index for decentralization, we devised a three-point ranking scale for each of the factors evaluated. The final decentralization index for each company was computed by adding the points for each factor and dividing this total by the number of factors (i.e., 9). This gave us an index ranging from a minimum of 1.0 ("highly decentralized") to a maximum of 3.0 ("highly centralized").⁴

Organizational Effectiveness

Organizational effectiveness was evaluated both in terms of behaviorally oriented measures and economic criteria. The factors examined were: (a) ability to hire and retain high-level manpower; (b) employee morale and satisfaction in work; (c) turnover and absenteeism; (d) interpersonal relationships; (e) interdepartmental relationships; and (f) utilization of high-level manpower. Economic or financial criteria examined were growth in sales and net profits during the last 5 years.

Three descriptive categories were created to evaluate the organizational effectiveness for each company studied, and a three-point ranking scale was devised. Two effectiveness indices were created, one for the behaviorally oriented measures and the other for the growth in sales and profits. These indices were obtained by dividing the total score by the number of factors. This gave us an index ranging from a minimum of 1.0 ("most effective") to a maximum of 3.0 ("least effective"). These data are presented in Table 1.

ANALYSIS OF RESULTS

To explore the impact of decentralization on organizational effectiveness of the firms under differing market conditions, we first classified the firms in our sample according to: (1) the competitiveness of their markets, and (2) their degrees of decentralization, resulting in the 3 x 3 matrix shown in Table 2. The effectiveness scores (both behavioral and economic) were then averaged for the firms in each of the nine resulting categories. These average scores are listed in the appropriate cells of the matrix, along with the number of firms used to compute them. As may be seen from this matrix, the relatively decentralized firms operating in highly competitive markets were relatively effective (average scores of 1.32 and 1.00 in behavioral and economic terms, respectively). On the other hand, the relatively centralized firms in highly competitive markets were considerably less effective (average scores of 2.60 and 2.25). Under these

⁴For details on decentralization index and its relationship with task environment, see, A. R. Negandhi and B. C. Reimann, "Task Environment, Decentralization, and Organizational Effectiveness," *Human Relations* (forthcoming).

competitive conditions, firms with an intermediate degree of decentralization were in between the above two extremes on effectiveness (see Table 2). These results lend considerable support to the contention that, under relatively competitive market conditions, decentralized firms are likely to be more effective than centralized firms [1; 7].

TABLE 1

Firm No.	Market Conditions	Decentralization Index	Effectiveness		
			Behavioral	Economic	
1	Highly competitive	1.2	1.1	1.0	
2		1.6	1.4	1.0	
3		1.2	1.1	1.0	
4		1.8	2.1	2.0	
5		1.9	1.9	1.5	
6		2.0	2.5	2.5	
7		1.7	2.0	1.5	
8		2.8	2.5	3.0	
9		1.4	1.9	1.0	
10		2.4	2.7	1.5	
11		1.2	1.1	1.0	
12		1.3	1.1	1.0	
29	Moderately competitive	1.7	1.9	2.5	
30		1.8	1.7	1.0	
13		1.8	1.9	2.0	
14		3.0	3.0	2.0	
15		2.9	2.5	2.0	
16		3.0	2.9	2.0	
27		2.1	2.0	2.0	
28		1.6	2.0	1.5	
17		Noncompetitive	1.6	1.4	1.0
18			2.5	2.5	1.5
19			1.8	2.4	1.5
20			1.8	1.3	1.0
21	2.2		2.3	1.0	
22	1.1		1.1	1.0	
23	1.5		1.6	1.0	
24	2.2		2.1	1.0	
25	2.3		2.1	1.5	
26	2.0		2.0	1.5	

TABLE 2
Organization Effectiveness (Behavioral and Economic)

Degree of Decentralization	Market Conditions		
	Highly Competitive	Moderately Competitive	Noncompetitive
High (Index 1.0 - 1.6)	$E_b = 1.32$ $E_e = 1.00$ (n = 6)	$E_b = 2.00$ $E_e = 1.50$ (n = 1)	$E_b = 1.37$ $E_e = 1.00$ (n = 3)
Medium (Index 1.9 - 2.0)	$E_b = 2.13$ $E_e = 1.88$ (n = 4)	$E_b = 1.90$ $E_e = 2.00$ (n = 1)	$E_b = 1.80$ $E_e = 1.50$ (n = 4)
Low (Index 2.1 - 3.0)	$E_b = 2.60$ $E_e = 2.25$ (n = 2)	$E_b = 2.60$ $E_e = 2.00$ (n = 4)	$E_b = 2.25$ $E_e = 1.40$ (n = 5)

Note: E_b = Average of effectiveness scores on behavioral criteria.
 E_e = Average of effectiveness scores on economic criteria.

However, contrary to our expectations a similar pattern was found among the firms operating under noncompetitive market conditions. As may be seen from the third column of the matrix in Table 2, average organizational effectiveness (both behavioral and economic) was, again, greatest in decentralized firms. However, these differences in effectiveness between centralized and decentralized firms were noticeably smaller than under competitive market conditions.

A similar increase of effectiveness accompanied increasing decentralization under moderately competitive conditions, although here this increase in effectiveness was rather slight (see second column of matrix in Table 2).

These results indicate that decentralization was also found to be functional in relatively noncompetitive markets.

The statistical significance of the observed differences in average organization effectiveness between the various cells of the matrix in Table 2 could not be tested because several of the nine categories contained only one or two firms. However, a reclassification of firms as operating in "moderately—to highly competitive," and "noncompetitive" markets and as being relatively decentralized (below median index value) and relatively centralized (above median index value) permitted the use of the Kruskal-Wallis analysis of variance by ranks. This test indicated that the relatively decentralized firms were significantly more effective (at the 0.05 level) than the relatively centralized ones under both competitive and noncompetitive market conditions.

We should point out that our sample of firms, of necessity, was not randomly drawn from the population of all manufacturing firms, Indian or otherwise. Therefore, we cannot interpret this statistical significance in the usual sense to generalize from our findings. Strictly speaking, we can generalize only to manufacturing firms similar to the group in our sample. However, the sample of firms represents, in the judgment of the authors, a good cross-section of typical manufacturing firms in India, both locally and American-owned. Therefore, the nonparametric statistical tests have been used in our data mainly to determine which of the observed relationships between variables has a significantly low probability (less than 0.05) of occurring due to chance alone, in our sample of manufacturing firms.

Influence of Market Competitiveness

As indicated earlier, the extent of the differences in effectiveness between relatively centralized and decentralized firms seemed to differ according to the competitiveness of the markets faced by these firms. To shed some further light on this observation, we calculated the correlations between effectiveness (behavioral and economic) and decentralization scores separately for each of the three levels of market competitiveness

(Table 1). To control for any possible effects of organization size, Kendall's partial rank correlation was computed for this analysis to hold size statistically "constant."

The resultant values for Kendall's regular and partial correlation coefficients for the relationships between decentralization and effectiveness (behavioral and economic) are presented in Table 3. The relatively small differences between the regular and partial correlation coefficients indicated that organization size had little, if any, influence on the decentralization and effectiveness relationships.

While all but one of the correlation coefficients were significant, the relative strength for all correlations decreased substantially as the environmental conditions became more stable (Table 3). This finding indicated that market conditions did, at least, influence the *relative importance* of decentralization to effectiveness of the firms. Therefore, the contingency theory appeared to be essentially valid in the environmental context of a developing country.

TABLE 3
Kendall's Correlation Coefficients for Decentralization
Index vs Organization Effectiveness

Organization Effectiveness	Market Conditions		
	Highly Competitive	Moderately Competitive	Noncompetitive
(1) Behavioral criteria	0.80 (0.78)*	0.72 (0.69)	0.56 (0.56)
(2) Economic criteria	0.69 (0.66)	0.60** (0.52)***	0.44 (0.48)

* Coefficients in parentheses are Kendall's *partial* coefficients—organization size held constant.
 ** Not significant—all other correlations significant at 0.05 level (1-tail).
 *** No test of significance available for partial correlation coefficients.

DISCUSSION AND IMPLICATIONS

The results of our study provide further evidence in support of a contingency theory of organizations. Moreover, our results suggest that for this theory to hold in a developing country like India, it must be slightly modified. That is, we cannot say that organization effectiveness requires decentralization under dynamic or competitive market conditions and centralization under stable, noncompetitive conditions. Rather, we would suggest that dynamic, competitive market conditions make decentralization *more important* to organizational effectiveness than do stable non-competitive conditions.

This finding actually was not at all surprising, considering the unique industrial climate prevailing in India. When their market environment was

a relatively stable seller's market, the firms experienced little difficulty in being effective, regardless of organization structure. Under these stable conditions, therefore, the variations in effectiveness were associated only slightly with degree of decentralization. However, under more dynamic and competitive market conditions, the extent of decentralization may well have played a considerably more important role in influencing organizational effectiveness. Competition for consumers and various resources was more severe, and effectiveness was therefore more difficult to achieve. Consequently, the firm's organization structure became a more vital factor in satisfying consumers (economic effectiveness criteria) as well as organization members (behavioral effectiveness criteria).

Some of the difference between our results and those reported by researchers such as Burns and Stalker [1] and Lawrence and Lorsch [7] may therefore be explained by the considerable differences in cultural and industrial environments encountered in our studies. Moreover, it must be remembered that we considered only the variations in the competitiveness of the organization's market environment, while the above-mentioned researchers were able to examine differences in both market and technological (or scientific) environments.

Nevertheless, it should be encouraging to proponents of a contingency theory of organization that a slightly modified version of this theory still appeared to hold in a cultural setting very different indeed from industrially advanced nations like the United Kingdom and the United States. Certainly this contingency theory affords a useful framework for studying organizations operating in various diverse environments.

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ERRATA

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Page 455, line 8: [36]. *Should be* [36; 27; 28; 30; 14; 24; and 26].

Page 456, line 2: [6]. *Should be* [6; 10; 16]. Line 20: [9]. *Should be* [9; 20].

Page 458, line 24: means. *Should be* means [34].

Page 462, line 35: [1; 39; 23]. *Should be* [1; 39; 23; 17; 41]. Line 13 [See Kegan, footnote*].

Page 464, line 34: Siegil *should be* Siegel. Line 41: Spiegel, Hans B. C., ed., *Citizen Participation in Urban Development*, Vol 1 and 2 (Washington, D.C.: NTL Institute, 1969).

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