A METHODOLOGY TO DEVELOP THE CRITERIA AND CRITERIA WEIGHTINGS FOR ASSESSING SUBUNIT EFFECTIVENESS IN ORGANIZATIONS - A REAPPLICATION

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Scope and Method of Study: A conclusion that can be derived from the empirical literature on organizational effectiveness is that the identification and selection of effectiveness criteria as well as effectiveness criteria weightings are necessary to assess organizational effectiveness. Even though this is a recognized fact on this topic of study there have been few attempts to develop a systematic solution for this problem.

This report attempts to test a methodology developed by Hitt and Middlemist (1979) to identify and to isolate effectiveness criteria and effectiveness criteria weightings of subunits within organizations. This solution emphasizes the importance of the identification of operational objectives and effectiveness criteria as determined by managers. Once the effectiveness criteria and operational objectives are identified, Hitt and Middlemist (1979) suggest the application of a policy capturing technique to identify and to provide a quantitative description (weightings) of the actual judgment policies of managers.

Findings and Conclusions: This study supports Hitt and Middlemist (1979) findings that the application of this methodology allows for comparative studies of subunits within the organization with different sets of relevant effectiveness criteria and operational objectives.

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CHAPTER I

INTRODUCTION

The human limitations are the basic reason for the development of the organizations that then become the institutions through which the society attempts to achieve many of its goals. Since the organizations are responsible for the transformation of resources in goods and services to the society, the effectiveness of these organizations have a great impact on the welfare of the society, and therefore, it is of crucial importance for organization theory to explain fully the effectiveness construct.

From a macro perspective a complete knowledge of the effectiveness construct would provide guidance for managers and administrators to identify and manipulate factors to improve organizational effectiveness and consequently achieve the best allocation of society's resources. From a micro perspective the effectiveness construct could be used as a direct aid for improving decision making within organizations. It could be used as a tool for diagnosis of managerial problems, for comparative studies among organizations or subunits within the organization, to evaluate the organizational development effort of firms or subunits, and for administering compensating plans, to mention some examples of possible uses of an effectiveness model.

Even though organizational effectiveness seems to be one of the most important constructs for all those involved in organizations, the

present organization theory does not provide a definite approach for assessing effectiveness. It should be recognized however that the existent inventory of ideas, approaches, and propositions for assessing organizational effectiveness provides a proper basis to enhance the development of effectiveness models. This current body of knowledge suggests that the effectiveness construct must be bounded by a theoretical framework to be consistent, and its empirical assessment is to be made through effectiveness criteria, that are the indicators to be used in assessing organizational effectiveness. So, defining the theoretical context the problem of assessing organizational effectiveness consists of identifying effectiveness criteria and the relative weightings of these criteria that will allow the measurement of organizational effectiveness.

Even though the identification and selection of effectiveness criteria as well as effectiveness criteria weightings are recognized as necessary to the assessment and measurement of organizational effectiveness, there have been few attempts to develop a systematic solution for this problem.

This paper attempts to test a methodology built within the goal approach and theoretical framework suggested by Hitt and Middlemist (1979) to develop effectiveness criteria and effectiveness criteria weightings for assessing organizational effectiveness in organizations. For the purposes of the application of this methodology organizational effectiveness is defined as the "organization's (or unit's) capacity to pursue and reach its operational objectives" (Hitt and Middlemist, 1979). This solution suggests that the identification of operational objectives as determined by managers are necessary as a frame of

reference for effectiveness assessment since they are related to the organization's broad objectives. It relies on the idea that key managers who set the organizational objectives are in the best position to establish observable effectiveness criteria to evaluate the achievement of objectives. Once the effectiveness criteria are established the methodology suggests the application of a policy capturing technique to identify and to provide a quantitative description (weightings) of the actual effectiveness judgment policies of managers. The results then can be used to make comparative analysis of organization's subunits with different sets of relevant criteria and criteria weightings, and different operational objectives.

This report presents a review of the literature on organizational effectiveness in Chapter II followed by a description of the theoretical framework and the application of the methodology developed by Hitt and Middlemist (1979) in Chapter III. The remaining part of this report presents the results, a discussion of findings, and the conclusions.

CHAPTER II

LITERATURE REVIEW

The Major Approaches and Definitions

Even though organizational effectiveness has been object of intensive studies, the literature does not provide one cohesive theory on what is required for an organization to be effective.

Organizational effectiveness is generally explained through the use of the classical or economic, goal, systems, or behavioral approaches to organizational effectiveness. According to the classical or economic approach, organizational effectiveness is viewed on an unidimensional utility scale (e.g., profit) and based on the assumption that profit is maximized. This approach is also called the economical model of rationality. The major problem of this approach is that it does not recognize the fact that organizations make decisions on multi-dimensional situations, involving choices among profits, market share, the impact of anti-trust laws, and other variables. In these multi-dimensional situations the assumption of profit maximization as the most rational decision is clearly violated (Thompson, 1967).

The goal approach defines organizational effectiveness in terms of goal achievement. The criticisms advanced regarding this approach are related with the identification of the parties involved in the goal setting process, their motives, the proper set of goals (multiple goals

and conflicting goals), and the distinction between the official goals and operational goals (actually pursued) (Perrow, 1961). The discussion over these issues on the goal approach provided a number of different alternatives to solve this problem. The basic solution suggests the use of goals for the specific purpose of organizational effectiveness assessment.

Scott (1977) suggests that the conflicting view of goals is irrelevant for organizational effectiveness assessment and distinguishes between goals employed for motivational or political purposes and those used to set effectiveness criteria for evaluation of participants. Steers (1975), Scott (1977), Campbell (1977), Cameron (1978), and Hitt and Middlemist (1979) suggest the use of operational goals defined as those the organization is actually trying to achieve. According to the Hitt and Middlemist's (1979) theoretical framework, these operational goals are established by key managers or the internal dominant coalition. Goodman and Pennings (1977) note that the goal formulation process is affected by the interaction of the internal and external constituencies and suggest that the internal dominant coalition is the mechanism for reconciling competing demands of these constituencies in a comprehensive set of goals, and for defining the perspective from which organizational effectiveness will be assessed. This view supports the theoretical framework developed by Hitt and Middlemist (1979).

The systems approach defines organizational effectiveness as the degree of ability of the organization to adapt to, to manipulate, and to fulfill expectations of the external environment, or the ability to exploit its environment in the acquisition of scarce and valued resources. Some of the difficulties found in this approach are related to the level of abstraction (Kahn, 1977). Pennings and Goodman (1977) note conceptual difficulties in the systems approach because it

focuses only on subunits related to external activities. It excludes from effectiveness considerations those subunits that do not deal with the acquisition of resources or return of outputs. One should recognize the importance of maintenance subunits and others that should be incorporated in the effectiveness assessment process to be evaluated for effectiveness. Steers (1975) suggests that the view of organizational effectiveness in terms of goal attainment is more logical because it relates the utilization of resources toward specific ends.

The behavioral approach suggests that behavioral and attitudinal characteristics of individuals or certain groups of employees within a firm reflect organizational effectiveness. Among these characteristics are employee satisfaction (Friedlander and Pickle, 1968; Negandhi and Reimann, 1973), absence of tension and conflict within subgroups (Georgopoulous and Tannenbaum, 1957; Ghorpade, 1971), psychological commitment (Schein, 1970), turnover and absenteeism (Campbell, 1975), interpersonal relations (Negandhi and Reimann, 1973), and morale (Price, 1968). Steers (1975) suggests that this approach views organizational effectiveness through an unidimensional framework and notes that even though some of these characteristics may be important for the effectiveness construct there is no reason to believe that they can explain organizational effectiveness individually.

The Empirical Literature

The empirical literature suggests two different models for assessing organizational effectiveness. Steers (1975) classifies these models as univariate and multivariate effectiveness models.

The univariate models are those which focuses only in one ultimate criterion to measure organizational effectiveness. Examples of types of ultimate criterion used in univariate models are net profit or productivity measured by output data, rate of return based on accounting data, employee satisfaction measured by self reported questionnaires, and withdrawal based archival turnover and absenteeism data (Campbell, 1973). Steers (1975) questions the usefulness of the univariate models based on the argument that the effectiveness construct is multidimensional in nature and therefore, there is no reason to attach effectiveness measures to one of these variables individually. These measures might be strongly related to the researcher's values or premises instead of with the capacity of the organization to achieve its goals. Steers (1975) suggests that the univariate models do not contribute to the understanding of the effectiveness construct.

The multivariate effectiveness models attempt to identify the relationships between a group of variables or effectiveness criteria and organizational effectiveness. Another aspect of these models is that they also attempt to describe the relationships (weighting or relative importance) among the variables or effectiveness criteria.

Yuchtman and Seashore (1968) suggest a conceptual model for assessing organizational effectiveness based on the systems approach. According to this model one should identify different types of relevant resources for the organization under study. The different levels of effectiveness that an organization might achieve are dependent upon its efficiency in terms of resource acquisition and output return, or its competitive position.

Prasad (1973) views organizations from the systems theory

perspective and conceptually identifies three subsystems within the organizations. The economic subsystem includes activities measurable in economic terms. The technical subsystem includes activities related with technical and manufacturing capability, and also market knowledge. The social subsystem includes capacity to adapt to environmental conditions, and interunit relationships. According to Prasad (1973) organizational effectiveness measurement should take into consideration characteristics of the various subsystems of the organization. An organization is to be considered effective if it maintains a balance level of effectiveness within each subsystem.

Jackson and Morgan (1978) note the importance of conceptual models as an aid to identify the problem and defining its dimensions but emphasize that an empirical study of the various variables are of crucial importance to the expansion of the present body of knowledge.

Georgopoulous and Tannenbaum (1957) define organizational effectiveness in terms of the fulfillment of organizational objectives and use three types of criteria as effectiveness components. The three criteria variables are productivity, intra-organizational conflict, and organizational flexibility. The organization effectiveness measure is obtained through ratings of individual judgment of a group of experts of the three criteria variables. The authors found that the criteria used proved to be related significantly to independent evaluations of effectiveness by experts.

Mott (1972) notes that organizational effectiveness can be measured internally and externally and suggests that these different perspectives may provide different results. This model attempts to assess organizational effectiveness through the development and

application of questionnaires to members of the organization. The effectiveness criteria used to develop the questionnaires are production, adaptability, and flexibility. Mott (1972) suggests that within certain limits the subjective judgment of the members of the organization provide a valid measure of effectiveness. In this study Mott emphasizes an internal view of organizational effectiveness.

Mahoney and Weitzel (1969) use a sample composed of general business organizations and research and development organizations and attempt to identify the relationships between a set of 24 independent effectiveness criteria and organizational effectiveness, defined as degree of goal achievement, according to managers judgment. In this study the relative weightings or importance of each of the 24 effectiveness criteria was identified. Mahoney and Weitzel (1969) found that each type of organization studied used a different set of effectiveness criteria for assessing organizational effectiveness.

Steers (1975) notes a lack of consistency between the competing effectiveness models that makes it difficult to identify what is necessary for an organization to be effective. He suggests that the degree of complexity of the organizational effectiveness construct may require contingency models.

Steers (1975), Scott (1977), Goodman and Pennings (1977), Campbell (1977), and Cameron (1978) note that once the approach (goal or systems in general) is defined, the critical issues of the empirical assessment of organizational effectiveness are the selection of the type of effectiveness criteria, the source of these criteria, and the level of analysis.

Criterion Type

Steers (1975) and Campbell (1977) note that no universal or specific group of effectiveness criteria has been identified by the empirical literature. Steers (1975) notes that universalistic models (based on a universal set of criteria) developed to be applied to all organizations (Caplow, 1964; Georgopoulous and Tannenbaum, 1957) may present problems of external validity, that is, the extent to which these models are considered valid in other organizational settings. In general the universal sets of criteria used in the universalistic models are developed based on a theoretical formulation or the researcher's values.

Hall (1972), Steers (1975), Scott (1977), and Hitt and Middlemist (1979) view this problem from the contingency theory perspective and suggest that organizations have different goals and environmental conditions, and therefore, may require an unique set of effectiveness criteria. These contingency models attempt to develop criteria based upon empirical investigation. Steers (1975) notes that these contingency models avoid the statement of specific assumptions about the findings until the results are analyzed. He suggests that an adequate identification of effectiveness criteria must take into consideration and be consistent with the goals and purposes of the organization under study.

Source of Criteria

The literature suggests external and internal constituencies as the two major sources of effectiveness criteria. Followers of the systems approach suggest that top administrators have narrow and biased

perceptions and point out that constituencies outside the organization are relevant for generating criteria and goals. It is suggested that only the external constituencies provide information about the organization's interaction and contributions to the supersystem to achieve the long run survival. Katz and Kahn (1977) recognize the importance of external constituencies as source of criteria but anticipate problems of measurement. Scott (1977) and Cameron (1978) note the importance of these constituencies and suggest that the appropriate source of effectiveness criteria may depend upon the purpose of the evaluation.

Goodman and Pennings (1977) recognize that the goals of the organizations are affected by the positions of internal and external constituencies, that may be incompatible in various instances in specifying organizational effectiveness. This view is supported by Mott (1972).

Goodman and Pennings (1977) suggest that the internal dominant coalition (or major decision makers) is the mechanism for reconciling the incompatible positions of the internal and external constituencies and for defining the perspective from which organizational effectiveness will be assessed. Hitt and Middlemist (1979) note that key managers (or major decision makers) that set the final organizational objectives are in the best position to establish observable effectiveness criteria and to evaluate effectiveness, defined in terms of the organization's (or unit's) capacity to achieve its operational objectives.

Level of Analysis

Kahn (1977) notes that the problem of criteria identification can

be viewed in terms of three different levels, the supra-organizational, the organizational, and the sub-organizational level. This perspective addresses the question of the source of criteria. Kahn (1977) suggests that each level of analysis may have a proper source of effectiveness criteria. The source of effectiveness criteria for the supra-organizational level would be the community or society, for analysis at the organizational level would be the elements of the relevant external constituencies for analysis at the intraorganizational level. The appropriate source of effectiveness criteria would be the major decision makers. A conclusion based on this rationale is that each level of analysis may require different measurement tools as well as different sets of effectiveness criteria.

Steers (1975) notes that, in general, the effectiveness models adopt a macro approach to assess organizational effectiveness, that is the major emphasis is on the organizational or supra-organizational level. Steers (1975) emphasizes the importance of the development of micro models (analysis at the intra-organizational level) of effectiveness with potential to describe the relationships between intra-organizational processes and organizational effectiveness. According to Steers (1975) this would provide a better understanding of the organizational effectiveness construct and constitute a meaningful tool for managers.

Pennings and Goodman (1977) and Hitt and Middlemist (1979) address this point specifically. The organization is viewed through the systems theory perspective and organizational effectiveness is considered associated with the contributions of the different subunits within the organization. Hitt and Middlemist (1979) assume a consistent

correspondence between the accomplishment of operational objectives at the subunit levels and the achievement of the organization's broad objectives. The findings of Hitt and Middlemist (1979) support this approach of assessing organizational effectiveness at the subunit level since no common criteria was identified at the organizational level in the particular organization studied.

Other Aspects of Effectiveness Criteria

Steers (1975) notes that effectiveness criteria can impose two further problems on effectiveness models. The first one is related with the identification of weightings, or the relative importance of each criteria within the effectiveness criteria. The different criteria weightings reflect the different values attached to each goal and the new models should identify the criteria weightings. The equal treatment of effectiveness criteria according to Steers (1975) introduces an error in effectiveness measurement. The second problem refers to constraints that obstruct criteria maximization. These constraints have a negative impact on any attempt to goal maximization. Steers (1975) emphasizes the usefulness of the contingency approach to the measurement of effectiveness and suggests that the new models developed should acknowledge this problem and measure effectiveness against the feasible set of goals adopting a goal optimization view rather than a goal maximization view.

Based on the literature, research questions were developed:

1. Can the methodology developed by Hitt and Middlemist (1979) be used to identify complete sets of effectiveness criteria and effectiveness criteria weightings of subunits within a manufacturing

organization in a different cultural environment?

2. Will effectiveness criteria and effectiveness criteria weightings vary between subunits within a manufacturing organization in a manner consistent with their various goals and objectives?

3. Will the resulting sets of criteria have potential to identify the impact of the cultural environment on the effectiveness models?

4. Is it possible to develop effectiveness models for different groups of subunits with similar objectives within an organization?

These research questions define the scope of this study.

CHAPTER III

THE METHODOLOGY

This chapter is composed of two sections. The first is a summary of the theoretical framework developed by Hitt and Middlemist (1979) to support their methodology. The second section is a systematic description of the application of the methodology.

Theoretical Rationale

Hitt and Middlemist (1979) note that univariate models used to measure effectiveness are the object of several criticisms, since they contribute very little to the understanding of the effectiveness construct. Hitt and Middlemist (1979) emphasize the importance of the results of recent dimensional in nature, and suggest that effectiveness measurement through multivariate models would be more relevant and useful.

Multivariate models generally attempt to describe the relationships between effectiveness variables (or effectiveness criteria) and organizational effectiveness. The key aspect of the construction of multivariate models is the development of a set of effectiveness criteria relevant to the organization.

Hitt and Middlemist (1979) developed the following set of guidelines for criteria development in an effectiveness measurement methodology based on the recommendations of Yuchtman and Seashore (1967) and Steers

(1975) and other effectiveness literature reviewed.

1. The criteria should be based on organization's goals and objectives.

2. The criteria should allow for comparative study of organizations and/or subunits that perform different functions and operate in different environments.

3. The criteria set should include not only productivity criteria, but other relevant criteria as well.

4. The criteria set should include both positive and negative (constraining) effectiveness criteria.

5. The method must include a procedure for determining the proper weightings of the different criteria, as well as their relationships to organizational effectiveness.

6. The method of determining criteria should be applicable at different analytical levels (e.g., total organization versus subunit level).

7. The method and the resulting criteria should allow for the uniqueness of the organization and/or subunit.

Hitt and Middlemist (1979) suggest that to achieve the organization's objectives the firm must achieve operational objectives at different hierarchical levels within the firm. Thus the identification of these operational objectives and effectiveness criteria by which the achievement of these operational objectives may be evaluated is necessary for the evaluation of organizational effectiveness. According to this reasoning Hitt and Middlemist (1979) suggest that the subunit level provide an appropriate level of analysis to assess organizational effectiveness within the organization.

The method used to identify effectiveness criteria focuses on organizational objectives as determined by managers. It relies on the idea that key managers who set the organizational objectives are in the best position to establish observable effectiveness criteria to evaluate the achievement of objectives.

Once the criteria are developed the next step is the assessment of the managerial judgment policies. Hitt and Middlemist (1979) note that judgment decision policies are difficult to identify. The stated policies differ from the policies actually used, and thus the only way to assess judgment policies actually being used is by observing and recording the manager's behavior in actual decision making process. So, models can be constructed by observing manager's actual evaluation of organizational effectiveness. Hitt and Middlemist (1979) note that if the presence of effectiveness criteria can be identified in the face of judgments of organizational effectiveness, certain regression analyses can be performed to establish the relationships between the criteria and the judgments.

Since it would be almost impossible to build a model for data collection of managerial judgments in ongoing units within an organization (practicality problems), Hitt and Middlemist (1979) suggest the use of simulated cases that duplicate the objectives and that use effectiveness criteria as they appear in the actual subunit. This solution is supported by previous research that demonstrates that the same results can be obtained using simulated cases as real conditions (Christal, 1967).

Hitt and Middlemist (1979) view managerial judgment policies within a cognitive model framework that governs the way managers make

decisions by integrating the various pertinent items of information in a single judgment.

Hitt and Middlemist (1979) note that the policy capturing technique has been frequently used to identify and to provide quantitative description of judgment policies and suggest this technique to assess effectiveness judgment policies.

Sample

This study was performed in a manufacturing organization in Brazil. This organization employs 1250 employees and six major subunits in the administrative area and six major subunits in the production area were object of this study (number of managers = 12).

Methodology

1. Identification of Potential Effectiveness Criteria.

The identification of potential effectiveness criteria was accomplished by asking the key managers of the organization to generate a list of criteria for each area under study, that according to their perceptions could reflect effectiveness or ineffectiveness of the subunits in achieving operational objectives. A list of 11 potential effectiveness criteria was developed for the administrative area (Table I) and another list of 14 potential effectiveness criteria was developed for the production area (Table II).

2. Development and Application of Simulated Cases.

A. Development of simulated cases.

A set of thirty cases was developed for each area under study consisting of a description of a simulated unit based on the effectiveness

TABLE I

LIST OF EFFECTIVENESS CRITERIA - ADMINISTRATION

Criteria Description	Code
Employee creativity on the job	A1
Employee Turnover	A2
Degree of coordination with other departments	A3
Degree of goal achievement	A4
Employee absenteeism	A5
Employee satisfaction level	A6
Number of complaints	A7
Amount and quality of employee training	A8
Quality of managerial skills (ability to plan, organize, motivate, and control)	A9
Problem solving ability	A10
$ Cost to provide the expected level of service	A11

TABLE II

LIST OF EFFECTIVENESS CRITERIA - PRODUCTION

Criteria Description	Code
Employee creativity expressed on the job	P1
Level of employee satisfaction	P2
Level of customer satisfaction	P3
Degree of coordination with other departments	P4
Delays in meeting orders deadlines	P5
Quality of the products manufactured	P6
Machine downtime (# of hours)	P7
Number of accidents	P8
Employee turnover	P9
Employee absenteeism	P10
Amount and quality of employee training	P11
Quality of managerial skills (ability to plan to organize, to control, and to motivate)	P12
Net Profit	P13
Achievement of production goal	P14

criteria developed in step one (Appendices I and II). Each criterion was included once, in each case, on a scale of one (low), two (moderately low), three (average), four (moderately high), and five (high). The level of each criterion was chosen randomly to control for researcher biases and potential collinearity among the criteria.

b. Application

Each manager received the same copy of the thirty cases developed for his respective area (administrative, production). The managers were asked to read the cases and considering the levels of criteria presented to rate the effectiveness of each simulated unit, on a scale of 1 to 7 (one = very ineffective, 7 = very effective). The objectives of the simulated units were assumed to be identical to the managers' own operating unit.

3. Criteria Independence Test

Even though the random assignment of the criteria levels should maintain a desired level of criteria independence and free from collinearity, that will avoid the effect found by Dudycha and Naylor (1966) that the inter-relationships among criteria may affect raters' judgment, an intercorrelation matrix should be constructed to test for criteria independence.

An intercorrelation matrix was constructed for each area under observation to test for criteria independence.

4. Policy Capturing

This step attempted to identify the managers' effectiveness models through the application of stepwise regression analysis. Regression equations were developed for each manager by using the data presented

on the set of thirty cases. The effectiveness criteria levels were considered as the independent variables and the effectiveness rates as the dependent variable.

5. Control Devices

It is suggested that an individual judgment model with $R^2 < .40$ indicates an inconsistent managerial rating of the thirty cases and should be excluded from the analysis. It is also considered that only the effectiveness criteria variables significant at $p < .05$ should be included in the effectiveness models.

CHAPTER IV

RESULTS

Criteria Independence

Table III shows the intercorrelation matrix constructed to test for criteria independence within the thirty cases developed for the administrative area. The highest r between any pair in this area was .414 and 98.2 percent of the pairwise r's were below .4. Table IV shows that the highest r between any pair in the production area was .491 and 98.9 percent of the pairwise r's were below .4. These results support the notion that the random assignment of the criteria levels can maintain the desired criteria independence (Hitt and Middlemist, 1979).

Policy Capturing

Tables V and VI present the results of the application of the policy capturing technique to identify the individual managers' effectiveness models. Only one individual model in the production area failed to meet the requirement to enter into the analysis (R^2<.40). The most complex individual model in the administrative area included 10 effectiveness criteria and the mean number of criteria used in the models was 5. In the production area the most complex model included 8 effectiveness criteria and the mean number was 6. In the administrative area only one criterion was not included in any

TABLE III

CORRELATION MATRIX FOR EFFECTIVENESS CRITERIA -
ADMINISTRATIVE AREA

	1	2	3	4	5	6	7	8	9	10	11
A1	-	-0.087	0.247	-0.087	0.063	-0.024	-0.271	0.055	-0.137	-0.311	0.414
A2			-0.261	0.276	-0.324	0.270	-0.078	-0.092	-0.099	-0.260	0.076
A3				-0.012	0.031	0.001	-0.077	-0.011	-0.134	0.251	-0.207
A4					-0.134	0.066	0.228	-0.260	-0.354	0.391	-0.089
A5						-0.306	0.307	0.065	-0.301	0.171	-0.110
A6							-0.190	-0.125	0.157	0.084	0.129
A7								0.054	-0.178	0.283	-0.139
A8									0.102	-0.113	-0.251
A9										-0.015	-0.033
A10											-0.348
A11											-

TABLE IV

CORRELATION MATRIX FOR EFFECTIVENESS CRITERIA -
PRODUCTION AREA

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
P1	-	0.189	0.133	-0.082	0.218	-0.126	-0.151	-0.025	0.210	-0.096	-0.053	0.057	0.041	0.308
P2			0.303	0.299	0.052	0.257	-0.232	-0.200	0.098	0.228	-0.250	0.039	0.014	-0.055
P3				0.279	-0.185	0.336	0.068	0.162	0.0	0.071	-0.073	0.383	0.016	-0.290
P4					-0.040	0.054	-0.014	0.246	0.300	0.191	-0.125	-0.035	0.071	-0.055
P5						-0.191	0.018	0.160	0.019	-0.138	-0.067	-0.188	0.109	-0.132
P6							0.222	0.171	-0.094	0.126	0.053	0.252	-0.007	0.139
P7								0.313	-0.069	0.134	-0.019	0.219	-0.491	0.041
P8									0.277	-0.062	-0.019	-0.061	-0.067	-0.021
P9										0.050	-0.020	0.104	0.042	0.144
P10											-0.179	0.290	-0.110	-0.152
P11												0.011	0.120	0.321
P12													-0.275	0.031
P13														-0.154
P14														-

TABLE V

INDIVIDUAL MANAGER'S REGRESSION MODELS FOR EFFECTIVENESS CRITERIA - ADMINISTRATION

Unit 1		Unit 2		Unit 3	
EC	SRC	EC	SRC	EC	SRC
A2	-0.582	A3	0.406	A5	-0.470
A10	0.469	A9	0.409	A3	0.455
A9	0.435	A6	0.301	A6	0.254
A7	-0.212	A4	0.343		
A4	0.153	A1	0.347		
		A10	0.342		
		A8	0.249		
		A7	-0.177		
		A5	-0.172		
		A2	-0.154		
F = 46.24		F = 26.18		F = 10.74	
d.f. = 5,24		d.f. = 10,19		d.f. = 3,26	
R^2 = 0.905		R^2 = 0.932		R^2 = 0.553	
Unit 4		Unit 5		Unit 6	
EC	SRC	EC	SRC	EC	SRC
A6	0.436	A3	0.595	A9	0.602
A3	0.212	A4	0.538	A7	-0.407
A7	-0.453	A9	0.343	A10	0.357
A8	0.392	A7	-0.309	A3	0.204
A10	0.378			A5	-0.169
A1	0.275				
A4	0.175				
F = 12.38		F = 11.81		F = 23.31	
d.f. = 7,22		d.f. = 4,25		d.f. = 5, 24	
R^2 = 0.797		R^2 = 0.653		R^2 = 0.823	

TABLE VI

INDIVIDUAL MANAGER'S REGRESSION MODELS FOR EFFECTIVENESS CRITERIA - PRODUCTION

Unit 1		Unit 2		Unit 3	
EC	SRC	EC	SRC	EC	SRC
P7	-0.451	P14	0.732	P12	0.505
P6	0.361	P13	0.552	P2	0.330
P3	0.381	P5	-0.291	P14	0.532
P11	0.171	P12	0.184	P13	0.375
P5	0.221				
P13	0.243				
P10	0.201				
P8	0.160				
F = 19.96		F = 30.54		F = 22.89	
d.f. = 8,21		d.f. = 4,25		d.f. = 7,22	
R^2 = 0.883		R^2 = 0.830		R^2 = 0.879	

Unit 5		Unit 6	
EC	SRC	EC	SRC
P13	0.832	P13	0.921
P3	0.321	P3	0.604
P14	0.172	P6	0.378
P2	0.162	P2	0.246
		P14	0.253
		P8	-0.184
		P4	-0.126
		P11	-0.109
F = 29.37		F = 58.27	
d.f = 4,25		d.f. = 8,21	
R^2 = 0.824		R^2 = 0.956	

model and in the production area only P-1 was not used. The individual models, in general, present a higher level of internal consistency with a fairly high R^2. The R^2 of the individual effectiveness models for the administrative area varied from .553 to .932, and for the production area they varied from .824 to .956. The mean R^2 of the administrative area was .777 and of the production area was .874.

An attempt to develop effectiveness models for each area (production-administrative) based upon the data of each group of six managers was made. Tables VII and VIII present the effectiveness models developed for the combined administrative and combined production areas. The two models also present a fairly high level of internal consistency with R^2's of .475 and .635 for the administrative and production areas, respectively.

TABLE VII

REGRESSION MODEL OF SIGNIFICANT EFFECTIVENESS CRITERIA - ADMINISTRATION

EC	SRC
A3	0.217
A9	0.220
A6	0.150
A4	0.183
A7	-0.155
A10	0.165
A8	0.113
A1	0.973
A5	-0.113
A2	-0.101
F = 15.33	
d.f. = 10,169	
R^2 = 0.475	

TABLE VIII

REGRESSION MODEL OF SIGNIFICANT EFFECTIVENESS CRITERIA - PRODUCTION

EC	SRC
P13	0.600
P6	0.165
P3	0.318
P14	0.336
P8	-0.120
P12	0.156
P2	0.134
F = 35.38	
d.f. = 7,142	
R^2 = 0.635	

CHAPTER V

DISCUSSION

The scope of this study was defined by four research questions. The first refers to the extent that the Hitt and Middlemist (1979) methodology could be used to develop sets of effectiveness criteria and effectiveness criteria weightings to assess subunit effectiveness within a manufacturing organization in a different cultural environment. The relevance of this test also relates to the fact that this methodology was applied to a non-business organization by Hitt and Middlemist (1979). This study provides information about its application by a business organization.

Tables V and VI show the individual effectiveness models developed for each area under study. In general the models were found to be logical, in terms of top managers perceptions and also in terms of particular characteristics of the subunits. In the administrative area A-11 (cost to produce the expected level of service) was the only criteria that was not included in any effectiveness model. This fact might be explained by the emphasis these staff units give to service without too much concern with costs. The low level of wages in the site where the study was undertaken might also explain a predisposition to disregard, up to a certain level, the costs involved in providing the service.

The only effectiveness criteria that was not included in any of the individual effectiveness models in the production area was P-1 (employee creativity expressed on the job). It should be mentioned that this particular company places a high value on employee contributions that represent a technological innovation according to the top managers perceptions. This is a well established policy of the company and the subunits' managers are expected to recognize these contributions with special bonus in cash. In view of this policy an explanation for the exclusion of this criterion is that the managers may have these contributions to be included in other more broad criteria. Two of these possible criteria are P-12 (Quality of managerial skills (ability to plan, organize, control, and motivate) and P-2 (level of employee satisfaction). Table VI shows that 4 models out of 5 include at least one of these suggested alternative criteria.

The results of this study show that this methodology can be successfully applied in business organizations. It seems that the contingency framework of this method allows for its application within different cultural environments. This finding supports the contingency approach to the assessment of organizational effectiveness suggested by Steers (1975) and Hitt and Middlemist (1979).

The second research question refers to the internal characteristics of the effectiveness models developed for the different subunits. The results presented in Table V and VI suggest that effectiveness criteria and effectiveness criteria weightings vary substantially among the subunits in each area studied. Since these effectiveness models were developed based upon managers perceptions of subunits' effectiveness in achieving goals, these results support Hitt and Middlemist

(1979) findings that effectiveness criteria and effectiveness criteria weightings vary among subunits according to their goals and objectives. The individual effectiveness models developed support the notion that organizational effectiveness is multidimensional in nature and that the effectiveness construct is composed of objective and subjective criteria. In the administrative area subjective type of criteria as employee creativity on the job, quality of managerial skills, or problem solving ability are found together with objective type of criteria such as employee turnover, or employee absenteeism in the same effectiveness models. In the production area, subjective criteria as quality of managerial skills and degree of coordination with other departments are found together with objective type of criteria such as net profit and achievement of the production goal in the same effectiveness models.

A comparison between the effectiveness models developed in each area shows a higher R^2 for those models from the production area (see Tables V and VI). The mean R^2 for the production is .874 and for the administrative area is .777. These results may be caused by the differences in the goal structure between the two areas. In this specific case it is likely that the production subunits have a more structured (formal) set of goals than the administrative subunits.

The third question relates to the identification of the impact of the cultural environment on the effectiveness models. Even though Negandhi (1974) recognizes that there is no universal applicability of management styles, he includes among the findings of cross cultural studies one of identification of management styles across different countries. It is suggested that the United States is best characterized

as a democratic participative management style, while Germany, France, and most of the developing countries are authoritarian in their management style. Another finding in his study suggests that more objective measures are brought to bear in making managerial decisions with respect to compensation, objectives, and goal setting, in the developed countries; while much more subjective judgment (emotions and religious beliefs) enters into the decision making process in developing countries. It seems that there is little doubt that the cultural variable may affect managers behavior and consequently their assessment of effectiveness. Although the Hitt and Middlemist (1979) methodology may be used in cross-cultural studies to determine the impact of this cultural variable on effectiveness models of managers from different countries the results of the present study do not support Negandhi (1974) findings mentioned above. The decision criteria used by the managers in this study seem to be no different than one might expect from managers under similar circumstances in the United States. However, another theoretical framework should be developed determining the exact nature of the variable culture (dependent, independent, or residual) and predicting its effect on other variables in order to fully test the cultural effects.

The fourth question refers to the development of effectiveness models for the two groups of subunits that were object of study. Tables VII and VIII show the models developed for these two areas. The R^2 for the effectiveness model developed for the production area was .653 and for the administrative area was .475. As suggested earlier this difference might be related to the extent that the goals and objectives of the production subunits are more structured (formally)

defined. These results differ from those of Hitt and Middlemist (1979) since the effectiveness models for department grouping in that study did not meet the requirement of a R^2>.40, and effectiveness criteria were not found to vary in a consistent manner for groups of subunits. A possible explanation for this divergence might be related to the type of organization (business and non-business) and their respective objectives. Hitt and Middlemist (1979) applied the methodology on a State Health Department which is a public, non-business organization that might have a broader set of goals and objectives than the business organization used in this study. It may indicate that effectiveness criteria apply to group of subunits in a manner consistent with the degree of similarity of their operational objectives. This suggests that the degree of similarity of objectives of the subunits within the groups identified in the organization studied by Hitt and Middlemist (1979) was lower than those found in the business organization in this study.

CHAPTER VI

CONCLUSIONS

The purpose of this study was to test a methodology developed by Hitt and Middlemist to identify effectiveness criteria and effectiveness criteria weightings as utilized by managers in measuring effectiveness. The following conclusions can be derived from the discussion of the results of this study.

1. The methodology developed by Hitt and Middlemist (1979) to assess subunit effectiveness within organizations may be successfully applied in business organizations.

2. The contingency framework within which this methodology was developed allows for its successful application in different cultural environments.

3. The results of this study support the notion of the importance and usefulness of contingency models to assess organizational effectiveness (Steers, 1975 and Hitt and Middlemist, 1979).

4. The results suggest that effectiveness models may be developed for groups of subunits with very similary objectives within business organizations. However, this may not be true within non-business organizations (Hitt and Middlemist, 1979).

5. As noted earlier in this paper, the results support Hitt and Middlemist (1979) findings that organizational effectiveness is a multidimensional concept, that effectiveness construct is composed of

objective and subjective types of criteria, and that effectiveness criteria and effectiveness criteria weightings vary among subunits in a manner consistent with their goals and objectives.

6. The results of this study did not allow any definite conclusions about the impact of the cultural environment on the effectiveness models. However, this methodology may be used for the identification of different management styles across cultures and for other purposes in cross cultural studies.

7. This study supports Hitt and Middlemist (1979) findings that the methodology allows for comparative studies of subunits by the use of actual ratings of the subunits on each of the criteria from the subunit manager's model by superiors. The models developed for the group of the subunits could also be used for this purpose.

8. Steers (1975) emphasizes the importance of the development of models that could be used by managers. This methodology was found to be of practical use for managers in decision-making situations. The following are examples of possible uses.

a. Corrective Action or Training Purposes - Since this method identifies the manager's effectiveness model actually used, the company could take corrective actions whenever criteria deviate from those desired. This would lead to better trained and more effective managers with a desirable impact for the company.

b. Administration of Compensation Plans or Career Planning - This methodology provides top management with a model that can be used for performance evaluation purposes. It makes possible comparisons between managers from completely different areas as production and administration. It provides a more sophisticated set of criteria and criteria weightings

to aid decisions about bonus payments for managers in production type of units and also for managers in service units that in general do not have a measurable productivity indicator.

It also can be used together with other personnel techniques to identify potential candidates for top positions in the company.

c. Timing - The fact that the application of the methodology is not restrained by specific periods in time, as most evaluation methods, makes it appropriate to assess effectiveness of subunits of different points in time.

The final conclusion relates to the extent that this technique could be used to assess effectiveness at the organizational level. As mentioned earlier in this paper, Prasad (1973) suggests that organizational effectiveness measurement should take into consideration the characteristics of the various subsystems within the organization. Prasad (1973) suggests that an organization will be effective if it maintains a balanced level of effectiveness within its subsystems. This framework support the notion that the accomplishment of objectives at the subunit level are consistently related to the accomplishment of the organizations broad objectives (Hitt and Middlemist, 1979). A conclusion that follows this rationale is that this methodology may be used to assess effectiveness at the organizational level.

NOTES

[1]This solution is supported by previous research that demonstrates that the same results can be obtained using simulated cases as real conditions (Cristal, 1967).*

[2]The policy capturing technique has been frequently used to identify and to provide quantitative description of judgment policy as performance appraisals (Taylor and Wilsted, 1974), bank loan decisions (Wilsted, Hendrick, and Stewart, 1973), and decisions regarding labor-management negotiations (Balke et al., 1973).*

[3]Dudycha and Naylor (1966) have demonstrated that intercorrelation among criteria may affect raters' judgment.*

[4]The application of multiple regression analysis is based on the findings of Slovic and Lichtenstein (1971) that found the linear model very appropriate for predicting human judgments.*

*Source: Hitt and Middlemist (1979).

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APPENDIX I

SAMPLE OF EFFECTIVENESS EVALUATION SHEET

The purpose of this section is to obtain your evaluation (rating) of the effectiveness of 30 simulated departments. Various information that might be useful to you in your determination of each department's effectiveness is presented to assist you in your evaluation. It is expected that an "effective" department will be considerably different from an ineffective department in terms of the information presented. The departments presented here were selected because the information among them varies widely from case to case, which makes it likely that a good spread of effective, partially effective, and ineffective programs have been included.

Instructions: Assume that a management audit has been performed on each of 30 departments concerning the work activities of the past 12 months. The data collected is in the form of five-point scales (from low to high) which are marked by the auditor to reflect his analysis of each separate activity (factor). Please read each audit report, considering the information presented on the particular department. Then record your evaluation of that department's effectiveness on the seven-point evaluation scale following the report. There are 30 programs so do not spend a great amount of time on any one, but do "consider" all the information before recording your judgment. Please make use of the entire scale.

Example: If you felt one department depicted was particularly ineffective, you might place an X in the left most blank, thusly:

very ineffective _X_:___:___:___:___:___:___: very effective
1 2 3 4 5 6 7

If you felt another department was especially effective, you might place an X in the right most blank, thusly:

very ineffective ___:___:___:___:___:___:_X_: very effective
1 2 3 4 5 6 7

and so on. Departments that were of average effectiveness might be rated in one of the more central blanks.

General Information on the Simulated Departments

To assist you in rating the effectiveness of the simulated departments you should assume the following:

1. Each department reported has essentially identical objectives, clients, environmental issues, etc., to the other departments.

2. Since the audit reports only contain data on how well the department performed various activities (not what the activities were), you should assume each department performs activities very similar to the activities performed in the department which you supervise.

3. Please recall that the information given in the simulated audit reports is in the form of low, moderately low, etc. You should have previously defined these points for those criteria which are quantifiable.

APPENDIX I (Continued)

Audit Report

Area: Administration

	Low 1	Moderately Low 2	Average 3	Moderately High 4	High 5
1. Employee creativity expressed on the job	___	X	___	___	___
2. Turnover	X	___	___	___	___
3. Degree of coordination with other departments	___	X	___	___	___
4. Degree of goal achievement	X	___	___	___	___
5. Employee absenteeism	___	___	___	___	X
6. Employee satisfaction level	___	X	___	___	___
7. Number of complaints	___	X	___	___	___
8. Amount and quality of employee training	___	___	___	___	X
9. Quality of managerial skills (ability to plan, organize, motivate, and control)	___	X	___	___	___
10. Problem solving ability	___	X	___	___	___
11. $ Cost to provide the expected level of service	___	___	___	___	X

Based upon the information presented above and upon your experience and knowledge, please rate the effectiveness of this department on the following scale by placing an X in the appropriate space:

very ineffective ___:___:_X_:___:___:___:___ very effective

APPENDIX II

SAMPLE OF EFFECTIVENESS EVALUATION SHEET

The purpose of this section is to obtain your evaluation (rating) of the effectiveness of 30 simulated departments. Various information that might be useful to you in your determination of each department's effectiveness is presented to assist you in your evaluation. It is expected that an "effective" department will be considerably different from an ineffective department in terms of the information presented. The departments presented here were selected because the information among them varies widely from case to case, which makes it likely that a good spread of effective, partially effective, and ineffective programs have been included.

Instructions: Assume that a management audit has been performed on each of 30 departments concerning the work activities of the past 12 months. The data collected is in the form of five-point scales (from low to high) which are marked by the auditor to reflect his analysis of each separate activity (factor). Please read each audit report, considering the information presented on the particular department. Then record your evaluation of that department's effectiveness on the seven-point evaluation scale following the report. There are 30 programs so do not spend a great amount of time on any one, but do "consider" all the information before recording your judgment. Please make use of the entire scale.

Example: If you felt one department depicted was particularly ineffective, you might place an X in the left most blank, thusly:

very ineffective _X_:___:___:___:___:___:___: very effective
1 2 3 4 5 6 7

If you felt another department was especially effective, you might place an X in the right most blank, thusly:

very ineffective ___:___:___:___:___:___:_X_: very effective
1 2 3 4 5 6 7

and so on. Departments that were of average effectiveness might be rated in one of the more central blanks.

General Information on the Simulated Departments

To assist you in rating the effectiveness of the simulated departments you should assume the following:

1. Each department reported has essentially identical objectives, clients, environmental issues, etc., to the other departments.

2. Since the audit reports only contain data on how well the department performed various activities (not what the activities were), you should assume each department performs activities very similar to the activities performed in the department which you supervise.

3. Please recall that the information given in the simulated audit reports is in the form of low, moderately low, etc. You should have previously defined these points for those criteria which are quantifiable.

APPENDIX II (Continued)

Audit Report

Area: Production

		Low 1	Moderately Low 2	Average 3	Moderately High 4	High 5
1.	Employee creativity expressed on the job	X				
2.	Level of employee satisfaction			X		
3.	Level of customer satisfaction				X	
4.	Degree of coordination with other departments					X
5.	Delays in meeting orders deadlines			X		
6.	Quality of product manufactured			X		
7.	Machine downtime (# of hours)			X		
8.	Number of accidents				X	
9.	Employee turnover	X				
10.	Employee absenteeism			X		
11.	Amount and quality of employee training		X			
12.	Quality of managerial skills (ability to plan, organize, control, and motivate)		X			
13.	Net profit					X
14.	Achievement of production goal	X				

Based upon the information presented above and upon your experience and knowledge, please rate the effectiveness of this department on the following scale by placing an X in the appropriate space:

very ineffective ___:___:___:___:___:___:___ very effective

1 2 3 4 5 6 7

VITA

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Business Administration

MBA Report: A METHODOLOGY TO DEVELOP THE CRITERIA AND CRITERIA WEIGHTINGS FOR ASSESSING SUBUNIT EFFECTIVENESS IN ORGANIZATIONS - A REAPPLICATION

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