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MANAGEMENT SYSTEMS AND ORGANIZATIONAL EFFECTIVENESS IN SELECTED MULTINATIONAL ORGANIZATIONS IN THE ARABIAN GULF REGION.

THE UNIVERSITY OF OKLAHOMA, PH.D., 1979

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GRADUATE COLLEGE

MANAGEMENT SYSTEMS AND ORGANIZATIONAL EFFECTIVENESS IN SELECTED MULTINATIONAL ORGANIZATIONS IN THE ARABIAN GULF REGION

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

BY

ABDULRAHMAN A. AL-JAFARY

Norman, Oklahoma

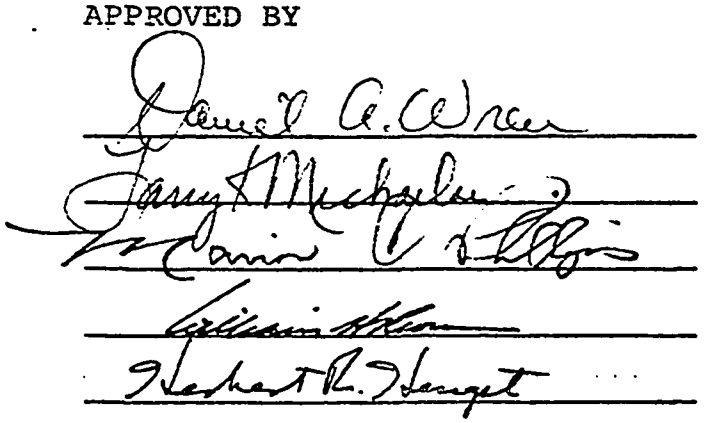
1979

MANAGEMENT SYSTEMS AND ORGANIZATIONAL EFFECTIVENESS

IN SELECTED MULTINATIONAL ORGANIZATIONS

IN THE ARABIAN GULF REGION

APPROVED BY



DISSERTATION COMMITTEE

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MANAGEMENT SYSTEMS AND ORGANIZATIONAL EFFECTIVENESS IN SELECTED MULTINATIONAL ORGANIZATIONS IN THE ARABIAN GULF REGION

CHAPTER I

INTRODUCTION

The twentieth century has witnessed some of man's greatest accomplishments in the domain of science and technology. These accomplishments are transforming the globe around us into entities that have more in common today than ever before. Vividly, one can see as this century is coming to an end that mankind is increasingly bound to a common destiny. Interdependency among the nations of our planet earth is being manifested in all aspects of our lives. Population explosion, natural resources distribution, and the advanced communication systems are but a few of the factors leading to this dependency. The new modes of communication systems are leading to what some people call the "shrinkage in international space." Vernon argues that:

> Perhaps the most proximate cause has been the revolutionary shrinkage in international space over the past two or three decades, brought by the introduction of new modes of international communication. . . . The shrinkage of space succeeded in narrowing the gap in

> consumer tastes between one country and the next. . . . The same development has helped to reduce the differences among producers in different nations in their choices of machinery and industrial processes. These developments have created the basis for a new state of interdependency among nations, manifested in higher level of international trades, greater flow of technical services across borders and larger movements of international capital.[1]

This process of cross-cultural exchange is inducing rapid changes in many societies. The direction of this change is toward a convergence of environmental elements in these societies. One living example and a witness of convergence is higher education. Many countries around the world are adopting the model of American universities. It is an irony that, in spite of the trend toward environmental convergence, most of the literature emphasizes environmental differences. Massie and Luytjes state that:

> The trend toward rapid changes in individual societies as a result of greater interaction with one another supports the hypothesis that there is a convergence of the environmental elements in these societies. The growth of international firms and the "westernizing" of other cultures have increased the number of common environmental factors; thus many developing economies may soon be able to use the mangerial approaches as their industrialized neighbors.[2]

These new developments are not only helping to reduce differences in machinery and industrial processes, but also, they are leading to adoption of new managerial concepts and techniques. The competitive forces are compelling producers

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[1] R. Vernon, "Storm Over the Multinationals: The Real Issues," Foreign Affairs, January 1977, p. 243.

[2] J. L. Massie and J. Luytjes (eds.), Management in International Context (New York: Harper and Row, 1972), p. 13.

to produce goods at the lowest cost and are making many countries compete for new ideas in management and hence, the flow of managerial concepts from one country to another is more likely today than ever before.

The role of management in economic development is widely recognized and well established by social scientists as well as by government officials around the globe. The developed countries are searching for the best methods to achieve ever-higher standards of living and greater economic power over rivals in the advanced block. The developing nations see their salvation from poverty and dependence on limited natural resources in industrialization. Both camps search for the best and cheapest way to produce. Management is the critical ingredient in the march toward industrialism. Harbison and Myers say that:

> In the march toward industrialism, capital, technology, and natural resources are but passive agents. The active forces are human agents who create and control the organizations and institutions which modern industrialism requires.[1]

Farmer and Richman echo the same idea and state that:

> Physical, financial, and manpower resources are by themselves but passive agents; they must be effectively combined and coordinated through sound active management if a country is to experience a level of economic growth and development.[2]

In the search for science in administration theory and

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[1] F. Harbison and C. A. Myers, Management in the Industrial World (New York: McGraw-Hill Book Co., 1959), p. 6.

[2] R. N. Farmer and B. M. Richman, Comparative Management and Economic Progress (New York: Richard D. Irwing), p. 1.

management, it is important to test and analyze some of the well-developed managerial concepts in different environments to assess their universal applicability. Negandhi and Prasad emphasize the necessity of understanding management in international context and say:

> The increasing interdependency of nations, the flow of capital, technology, and ideas from one country to the other, and a constant search for better methods in most productive endeavors add to the importance of a proper understanding of management in a world context.[1]

Dimensions of the Human Organization

Many scholars have studied organizations and managerial practices from many angles. There exists an enormous amount of literature on leadership, motivation, organization structure, job satisfaction, performance, communication, group process and organizational climate. But few attempts were made to integrate these aspects of organizational life into a conceptual framework to study organizations. The theme that seems to run through most of these studies reflects similar sentiments that a more participative style of management will result in improved organizational effectiveness. However, the concept of participation is not well defined.

> Participation literature includes a plethora of undefined terms and characteristically lacks explicitly stated theoretical frameworks. The pervasive value bases underlying topic labels like industrial democracy and power equalization are not usually made explicit and are therefore rarely systematically questioned. But different value systems imply different definitions of participation,

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[1] A. R. Negandhi and B. Prasad, Comparative Management (New York: Appleton-Century, 1971), p. 6.

so that the term participation has a variety of meanings, across investigators.[1]

Dachler and Wilpert propose a four dimensional conceptual framework to distinguish between the variety of meanings of participation. First, the social theories underlying participation, such as democratic theory, socialistic theory, human growth and development theory, and productivity and efficiency orientation. Second, the properties of participatory systems, such as the structures and processes along which different participatory schemes may be utilized. Third, the contextual boundaries within which participation occurs and which may limit or enhance the possibility of participatory social systems. The fourth and final dimension is the outcomes of participation which are a function of the other three dimensions.[2]

The first dimension, social theories underlying participation, is the point of departure and is the premise upon which a participative system is built. The most promising social theory in a multinational organization setting is the human growth and development theory, because it does not fundamentally question the basic political, social, or economic order in a society. "[Its] emphasis is primarily on how to arrange organizational settings in a given societal

---

[1]H. Peter Dachler and Bernhard Wilpert, "Conceptual Dimensions and Boundaries of Participation in Organizations: A Critical Evaluation," Administrative Science Quarterly, March 1978, Volume 23, p. 1.

[2]Ibid., p. 3.

framework so as to facilitate the psychological development and growth of individuals and groups."[1] The works of Rensis Likert and his associates at the University of Michigan are one of those few integration approaches to study organizations which are based on the human growth and development theory.

To study the human organization of any enterprise, Likert identifies a number of key dimensions, which fall into two classes of causal and intervening variables. Management can alter the causal variables which will produce changes in the intervening variables, and, in turn, in the end result performance data. The causal variables are managerial leadership and organizational climate. The behavior and policies of top level management determine organizational climate variables and hence influence lower level managerial behavior and practices. The internal state and health of the organization can be measured by the intervening variables, which reflect the loyalties, attitudes, motivations, perceptions of all members and their collective capacity for effective interaction, decision making, communication and satisfaction. The dependent variables in Likert's model are productivity, costs, scrap loss, earnings and market performance.[2]

Furthermore, organized management systems can be

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[1] Ibid., p. 8.

[2] R. Likert, "Human Resource Accounting: Building and Assessing Productive Organizations," Personnel, May/June 1973, pp. 9-10.

described in terms of a continuum with the most autocratic at one end and the most participative at the other end. Likert has described four generally distinct areas of the continuum: exploitive-authoritative, benevolent-authoritative, consultative, and participative group. In the Human Organization (1967), he called these systems 1, 2, 3 and 4, where system 1 is the most autocratic and system 4 the most democratic, "participative group" system.[1]

According to Likert, research findings support the idea that management systems which are leaning toward system 4 are more productive and have lower costs and more favorable attitudes than management systems leaning more to the left toward system 1.

> Those firms or plants where system 4 is used show high productivity, low scrap loss, low costs, favorable attitudes, and excellent labor relations. The converse tend to be the case for companies or departments whose management system is well toward system 1.[2]

System 4 management is based on three major concepts: (1) the principle of supportive relationships, (2) group decision-making and group methods of supervision, and (3) high performance goals.[3]

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[1] R. Likert, The Human Organization (New York: McGraw-Hill, 1967).

[2] Ibid., p. 46.

[3] Ibid., p. 47.

PURPOSE OF THIS STUDY

The purpose of this study is two-fold: first, to identify management systems in multinational organizations operating in the Arabian Gulf Region, compare the sample mean scores with the national norms in the United States, test whether regional differentiation influences perception of the management systems, and test whether there are differences between perceived and desired managerial and peer leadership; and second, to test the relationships between management systems and effectiveness, between management systems and internal state and health, and between internal state and health and effectiveness. Likert's model will be used as the major conceptual framework in order to accomplish this study, with some modification of the dependent variable, organizational effectiveness. Further discussion of this modification is presented in Chapter II.

NEED FOR THE STUDY

A new form of organization is emerging as a result of the increasing interdependency among the nations of our planet earth. This is the multinational organization with people from different cultural backgrounds operating in different environments to achieve some organizational goals. This is a significant development where research is needed. The problems associated with managing such organizations are seldom discussed in management literature. Therefore, this

study will attempt to focus attention on this area and hopefully lead to further research and study.

Second, it is an attempt to integrate organizational theory with cross-cultural studies and specifically to test the validity of some of the concepts proposed by the humanist theorists, namely Likert and his associates' conceptualization of management systems. Negandhi states the need for integration as follows:

> Integration between the cross-cultural comparative management and organizational theory area is needed. Scholars working in these two areas appear to be pursuing their research inquiries more independently than is conceptually and methodologically desirable.[1]

Third, it is toward contributing to the sciences of organization and management theory that this study is being undertaken. Researchers in administration and organization theory must consider the applicability of their propositions and concepts worldwide if their aims are to create a science of organizational theory. Heady states this point as follows:

> Those who are attempting to construct a science of administration recognize that this depends among other things, on success in establishing propositions about administrative behavior which transcend national boundaries.[2]

Fourth, industrialization in developing nations is being viewed as the key to progress. People in the develop-

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[1] A. R. Negandhi, "Comparative Management and Organizational Theory: A Marriage Needed," Academy of Management Journal, Vol. 18, No. 2, June 1975, p. 334.

[2] F. Heady, Public Administration: A Comparative Perspective (Englewood Cliffs, N.J.: Prentice-Hall, 1966), p. 3.

ing nations see their salvation in moving rapidly toward industrialization. The development of the human as well as the natural resources is a goal to achieve prosperity. The Arab countries around the Arabian Gulf are moving in the direction of industrialization and specifically petroleum and petrochemical industries. Saudi Arabia alone is attempting to spend approximately 45 billion dollars to industrialize in the next five years. Other countries such as the United Arab Emirates and Kuwait have some ambitious industrial projects. One important fact about this region is that personnel in the petroleum industry, a well-established industry, and the projects under way are multinational. People come from all over the world to work in these plants. To manage such organizations and to make them competitive in the international market requires a highly developed management system. Research is a major instrument in the advancement and progress of any industry. To this researcher's knowledge, no research has been made to study management systems in this area. Therefore, this will be a beginning and might invite more studies to come.

ORGANIZATION OF THE STUDY

The preceding pages were introductory in nature, the purpose of which was to set the stage for the study. The remaining parts of this research are directed toward the accomplishment of the following objectives; (1) review of

relevant literature in organizational theory and comparative management, (2) development and presentation of the research model as a derivative of current research and studies in the field of management, and (3) presentation and analysis of the results of this research.

Chapter II, "Review of Relevant Literature," provides the theoretical foundation of the study, in a manner that shows the relationship of the Likert model to organizational behavioral theory. Two parts of the chapter are devoted to the concept of organizational effectiveness and to research on the transfer of management concepts in cross-cultural studies.

Chapter III, "The Research Model and Methodology," provides a presentation of the research model, definition of terms, research questions and hypotheses, research methodology, sampling and data collection, research instruments, and statistical procedures for data analysis.

Chapter IV, "Research Findings and Analysis," presents statistical tabulation and interpretation of statistical results of the study.

Chapter V, "Summary, Conclusions and Recommendation for Further Studies," provides a summary of the research findings and implications of these findings for organizational theory and suggestions for future research.

CHAPTER II

REVIEW OF RELEVANT LITERATURE

The purpose of this chapter is to provide the theoretical foundation of this study. First, it pinpoints the area of this study with respect to the discipline of management and organizational theory. Second, it presents Likert's model of management systems and related studies. Third, it reviews the concept of organizational effectiveness. Fourth, it reviews studies of cross-cultural management.

Introduction

The search for harmony between man and organization is a continuing and evolving process. It is not the purpose of this study to trace this evolving thought, but it is necessary to put the present study in perspective with regard to present literature in the field of management and organizational theory. The Hawthorne studies can be considered as a turning point in the history of management thought, in the sense that they brought to the study of organizations an orientation different from those used by the classical theorists. The human relations movement was a by-product of these studies. The names of Elton Mayo,

Roethlisberger, Dickson, and others are familiar to students of management. The relationship between supervision, morale and productivity was the focus of these studies. "This link between supervision, morale, and productivity became the foundation stone of the human relations movement."[1] This movement is being replaced by what Scott and Mitchell call "organizational humanism."

> Even though the human relations movement waned around 1960, its spirit of inquiry did not die. Rather it was transformed into a new movement which we call organizational humanism. It is currently expounded by such well-known writers as Argyris, Warren Bennis and Rensis Likert.[2]

The philosophical foundation for organizational humanism is found in the behavioral sciences. It was the discovery that man was more complex than orthodox human relations had assumed, the criticism that human relations was "happiness oriented" and the growth and sophistication of behavioral sciences that led to the decline of the human relations movement.[3] Organizational humanism proposed to change the traditional organizational structure and work relationships. Most of all, organizational humanism is directed at changing management's mind as to what are good

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[1]D. A. Wren, The Evolution of Management Thought (New York: Ronald Press, 1972), p. 283.

[2]W. G. Scott and T. R. Mitchell, Organization Theory: A Structural and Behavioral Analysis, 3rd ed. (Homewood, Ill.: Richard D. Irwin, Inc., 1976), p. 15.

[3]D. A. Wren, The Evolution of Management Thought, p. 442.

administrative systems. "Organizational humanism embraces all movements which are liberal in spirit, seeking to bring to workers freedom from oppression and an opportunity for self-determination."[1]

Organizational humanism is being crystallized into what is being called "organizational behavior": the study of structure, the operation of an organization, and the action and interaction of individuals and groups within them. Pugh, et al., defined organizational behavior in the following manner:

> Organizational behavior is the study of structure and functioning of the organizations and the behavior of groups and individuals within them. It is an emerging interdisciplinary quasi-independent science, drawing primarily on the discipline of sociology and psychology, but also on economics, political science, social anthropology and production engineering.[2]

In order to integrate concepts derived from sociology and psychology, Pugh, et al., sought to place organizational behavior within the context of organizational theory. Six major lines of development in organizational theory were considered to have a bearing on the emerging subject: the management theorists' work, structural theorists, group theorists, individual theorists, technology theorists, and economic theorists. Research in organizational behavior is basically related to one of these areas. However, recently

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[1]Scott and Mitchell, Organization Theory, p. 15.

[2]D. A. Pugh, et al., Research in Organizational Behavior (London: Heinemann, 1975), p. 1.

four basic areas of research are being developed: organizational design, organizational motivation, organizational leadership, and organizational decision-making.[1] To illustrate these relationships, a graphic representation was made as shown in Figure 1.

One of the leading theorists in organization humanism was Douglas McGregor. "McGregor has served as a bridge from the old view of human relations to the new organizational humanism."[2] McGregor's theory "Y" holds that people are capable of exercising creativity, self-direction and self-control and that people learn to seek responsibility if they are given the chance to do so. Furthermore, McGregor suggests that managers who manage the human resources utilizing the theory "Y" assumption will get a higher overall level of performance and higher employee satisfaction.[3]

Another management scholar who links management systems to organizational performance and satisfaction is Rensis Likert. In his New Patterns of Management (1961), Likert says that his book offers a new theory of organization based on the management principles and practices of those managers who were producing the best results in American business and government. This theory is based on an

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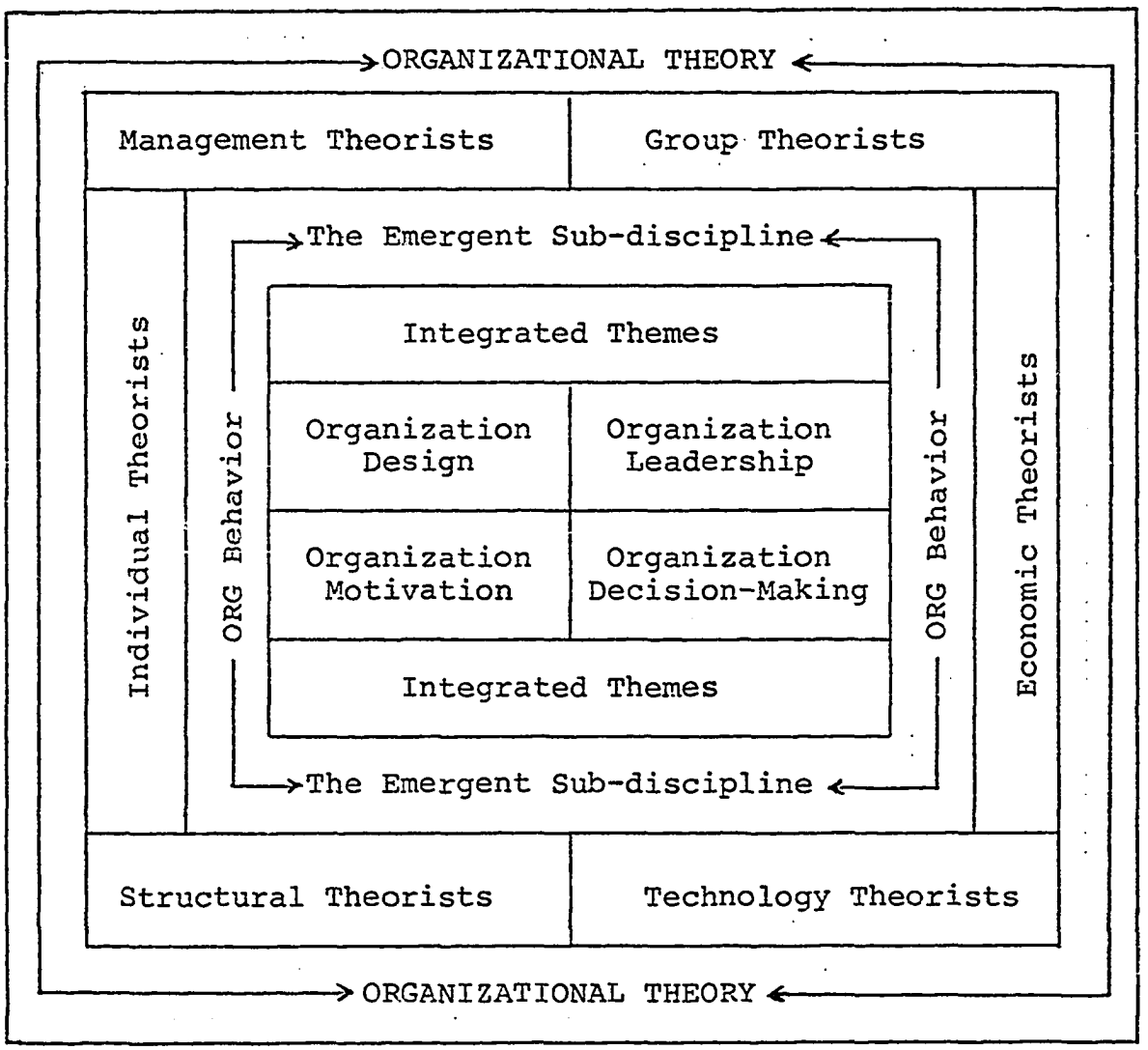
[1]Ibid., pp. 4-26.

[2]D. A. Wren, The Evolution of Management Thought, p. 451.

[3]D. McGregor, The Human Side of the Enterprise (New York: McGraw-Hill, 1960), pp. 47-48.

FIGURE 1

An Illustration of Pugh, Mansfield and Warner Presentation Of Organizational Behavior in the Context Of Organizational Theory



intensive research which was carried out at the Institute for Social Research and Research Center for Group Dynamics at the University of Michigan since 1947.[1] This theory is based on three major concepts: (1) the principle of supportive relationships, (2) group decision-making and group methods of supervision and (3) high performance goals.

Likert contends that the more the organization moves toward the application of these concepts, the more it is approximating system 4 management. Likert further argues that organizations can be described in terms of eight dimensions, each of which is a continuum. These dimensions are: leadership process, motivational process, communication process, interaction process, performance goals, goal-setting process, control process, and decision process.[2] Comparing this approach with Pugh's, et al., conceptualization in Figure 2, one can see that Likert's management system integrates all themes in organization behavior.

Closely associated with the human growth and development theory of participation is Chris Argyris. Argyris' theory is that formal organization has four basic properties that keep individuals immature and mediate against self-actualization. These properties, held dearly by traditional

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[1] R. Likert, New Patterns of Management (New York: McGraw-Hill Book Co., 1961), p. vii.

[2] R. Likert, The Human Organization (New York: McGraw-Hill Book Co., 1967), pp. 197-211.

organizational theorists, such as the specialization of labor, the chain of command, the unity of direction, and the span-of-control, are hindrances to the development of a mature personality.[1] Therefore, to reduce the incongruency between the need of the healthy personality and the demand of the formal organization, Argyris proposes the following:

> Job enlargement, an increase in the number of tasks performed by the employee along the flow of work or a lengthening of the time cycle required to complete one unit. . . . Participation, employee-centered leadership decreases feelings of apathy, dependence, and submissiveness and helps the individual achieve self-actualization, while helping the organization meet its goals. In other areas Argyris advises management to give employees a variety of experiences to challenge them by giving them more responsibility, and to rely more on self-direction and self-control.[2]

Management System

A system is an integrated assemblage of parts or subsystems that are designed to accomplish some goal or objective. An organization can be thought of as a system, which in the attainment of its objectives, produces a product or renders a service. In the process of interdependency between systems and subsystems with any sociological environment, the output of one system is an input for another system.[3]

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[1] D. A. Wren, The Evolution of Management Thought, pp. 446-447.

[2] Ibid., p. 448.

[3] T. Parson, "Social Systems," in The Sociology of Organization, Oscar Grusky and George A. Miller, eds. (New York: The Free-Press, 1970), p. 75.

The systems concept is an old one, but the use of this concept in management and organizational analysis is relatively new. Basically, it is an attempt to sharpen managerial skills in the process of developing an operative management theory, and to provide an improved conceptual framework for organizational design and operation.[1] Glans, et al., define management system in this manner:

> Management system means the methods by which an organization plans, operates, and controls its activities to meet its goals and objectives by utilizing the resources of money, people, equipment, materials and information.[2]

However, Likert uses the term "management system" to describe a generalized management style which members of an organization perceive to be the dominant style in their organization. Drawing on research findings at the Institute for Social Research at the University of Michigan, Likert conceptualized four management systems along a continuum from system 1 through system 4. These areas on the continuum basically designate the degree of participation, the application of the principle of supportive relationships, group decision-making and group methods of supervision, and high performance goals.[3]

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[1] D. A. Wren, The Evolution of Management Thought, pp. 479-480.

[2] T. B. Glans, et al., Management Systems (New York: Reinhart and Winston, Inc., 1968), p. 3.

[3] R. Likert, The Human Organization, pp. 13-46.

The four generalized management systems proposed by Likert range from the most autocratic system 1, "Exploitive Authoritative," system 2, "Benevolent Authoritative," system 3, "Consultative," to system 4, the most democratic on the continuum, the "Participative Group" system. These four systems have been described as follows:

> System 1. Management having no confidence or trust in subordinates. The bulk of the decisions and the goal setting of the organization are made at the top. Subordinates are forced to work with fear, threats, punishment, and occasional rewards. The little superior-subordinate interaction which takes place is usually with fear and mistrust. The control process is highly concentrated in top management, and informal organization generally develops which opposes the goals of the formal organization.
>
> System 2. Management has condescending confidence and trust in subordinates such as in the master and servant relationship. The bulk of the decisions and goal setting of the organization are made at the top, though many decisions are made within a prescribed framework at lower levels. Rewards and some actual or potential punishment are used to motivate workers. The control process is still concentrated in top management, but some is delegated to middle levels.
>
> System 3. Management has substantial but not complete confidence and trust in subordinates. Subordinates are permitted to make minor decisions at lower levels. Communication flows both up and down the hierarchy. Rewards, occasional punishment, and some involvement are used to motivate. There is a moderate amount of superior-subordinate interaction, often with a fair amount of confidence and trust. Significant aspects of the control process are delegated downward with a feeling of responsibility at both higher and lower levels. An informal organization may develop, but it may either support or partially resist goals of the organization.
>
> System 4. Management is seen as having complete confidence and trust in subordinates. Decision making is widely dispersed throughout the organization. Communication flows not only up and down the hierarchy but among peers. Workers are motivated by participation

> and involvement in developing economic rewards, setting goals, improving methods, and appraising progress toward goals. There is extensive, friendly superior-subordinate interaction with a high degree of confidence and trust. The informal and formal organizations are often one and the same. Thus, all social forces support efforts to achieve stated organizational goals.[1]

As stated in Chapter I, Likert contends that it is possible to measure the human organization or the management system of any enterprise by a relatively small number of key dimensions. These dimensions fall into two classes--causal and intervening variables. The causal variables are managerial leadership and organizational climate. Management can alter these causal variables and in turn produce changes in the intervening variables and henceforth in organizational performance.[2]

The intervening variables are peer leadership, group process, and satisfaction. These variables reflect the internal state and health of the organization, such as the attitudes, loyalties, motivation, performance goals, and members' perceptions of their collective capacity for effective communication, interaction, and decision-making.[3]

The dependent variable is the total productive efficiency of the organization. This variable reflects the achievement of the organization as to its costs, productivity,

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[1] W. J. Reddin, Managerial Effectiveness (New York: McGraw-Hill Book Company, 1970), pp. 196-197.

[2] R. Likert, "Human Resource Accounting," p. 9.

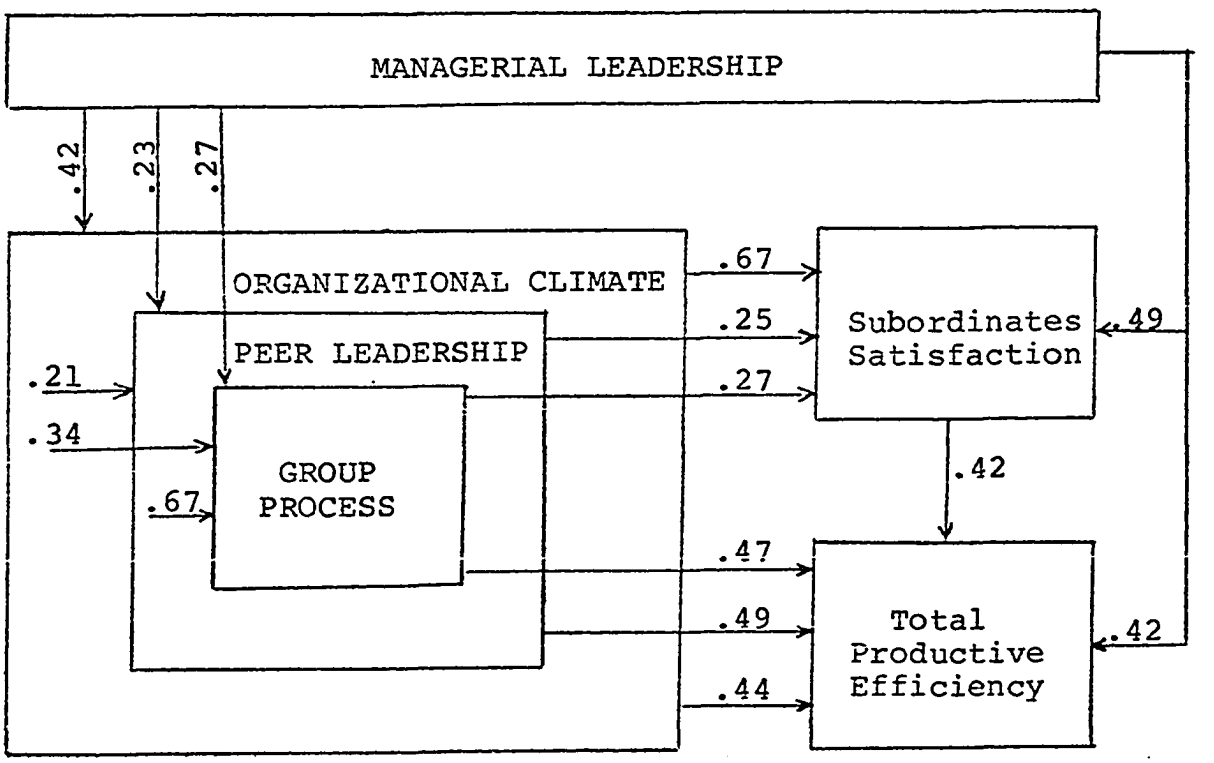
[3] Ibid., p. 10.

earnings, scrap loss, and market performance. The relationships and magnitudes among the human organizational dimensions and performance are shown in Figure 2. The figure represents an aggregate of studies of more than 220,000 employees and managers in a variety of organizations.

> Studies involving more than 200,000 employees and 20,000 managers or administrators in virtually all kinds of business and in governmental agencies, hospitals, schools, voluntary associations and other organizations show that favorable scores on organizational climate and managerial leadership dimensions are associated quite consistently with favorable scores on the intervening variables and with high performance when trends over time are examined.[1]

FIGURE 2

Relationships Among Human Organizational Dimensions and Performance



[1] Ibid., p. 11.

Figure 2 shows the unidirectional flow of influence from managerial leadership to organizational climate and other variables, and from the intervening variables to total productive efficiency and satisfaction. Likert admits that this might be an over-simplification of the relationships, nevertheless, the arrows show the major flow of influence. The numbers next to the arrows are the square of the coefficient of correlation between the variables. Thus, for example, .42 next to the arrow between Managerial Leadership and Organizational Climate means that 42 percent of the variance in organizational climate is accounted for by managerial leadership.[1]

Likert's conceptualization of the management system and his advocacy of system 4 management is based on research findings over the years which point the way to some basic principles. These are general principles that operate in almost all instances and are universal and transferable because:

1. Human nature, basically and in terms of inherited qualities, is the same the world over.
2. The scientific method is the same in all nations.
3. Culture may influence the method of application of basic principles of management, but culture is not itself a basic principle of management. . . . With increasing industrialization cultural differences will very likely diminish, for one thing, industrialization creates large-scale enterprises with large numbers of employees and with substantial interdependence.[2]

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[1] Ibid, pp. 11-12.

[2] D. G. Bowers, Systems of Organizations (Ann Arbor: The University of Michigan Press, 1977), p. 108.

Although Likert advocates system 4 management as the most effective management system, he recognizes the importance of the constant interaction between an organization and its external environment. This interaction is a two-way street, where the organization also has some influence on the external environment, and suggests that:

> When an organization is using a different management system from the external environment, problems are likely to be created. Thus system 4 organizations in an environment whose organizations and institutions are largely system 1 or 2 will experience a variety of pressures to move to a management system similar to the predominant characteristics of the external environment. The system 4 organization simultaneously will be creating forces in the external environment to move it toward system 4. . . . Skillful, patient efforts on the part of the system 4 organization would be required to convert the conflict-resolution efforts to a win-win pattern.[1]

Managerial Leadership

Leadership has been a fascinating subject for historians and social scientists for centuries. Research studies attempting to discover those traits or qualities that are possessed by great leaders can be traced back to historians of ancient Greece and Rome such as Herodotus or Tacitus.[2] In modern times, this fascination with the subject of leadership has resulted in enormous amounts of

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[1] R. & J. Likert, New Ways of Managing Conflict, New York: McGraw-Hill, 1976), p. 56.

[2] W. G. Scott and T. R. Mitchell, Organization Theory, pp. 285-286.

research and publications on the subject. Nevertheless, one cannot find a generally acceptable comprehensive theory of leadership. Instead, one finds several theories emerging from several behavioral disciplines. Gibson, et al., state that:

> There appear to be three broad leadership theory categories which have emerged and into which most research and opinion can be placed. They are (1) trait theories, (2) personal-behavioral theories, and (3) situational theories.[1]

The "trait theory" of leadership holds that there are identifiable and common characteristics that are unique to leaders.[2] Thus, most of the research was directed toward identifying physical, intellectual, emotional, and personal characteristics of leaders. Research findings are inconsistent. According to Scott and Mitchell:

> The research has generally supported the idea that leaders should be responsible, sociable, and somewhat dominant. Again, however, the findings across settings are inconsistent and those results that are reported are generally weak.[3]

The concern for human interrelationship and the dissatisfaction with the trait theory of leadership led to

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[1]J. L. Gibson, et al., Organizations: Structure, Processes, Behavior (Dallas, Texas: Business Publications, Inc., 1973), p. 294.

[2]See R. M. Stogdill, "Personal Factors Associated with Leadership: A Survey of the Literature," Journal of Psychology, 25 (1948), pp. 35-71; Handbook of Leadership: A Survey of Theory and Research (New York: The Free Press, 1974); Edwin E. Ghiselli, "Managerial Talent," American Psychologist, 18 (1963), pp. 631-641.

[3]Scott and Mitchell, Organization Theory, p. 287.

the development of the "personal-behavioral theories" of leadership. This new approach emphasizes what the leader does in order to successfully accomplish organizational objectives. Behavioral emphasis played down the leader's attributes as critical factors in leadership.

> Leadership was viewed as the performance of those acts which helped the group to achieve its preferred outcomes (e.g., improving the quality of interaction, building cohesiveness, making resources available to the group, or increasing effectiveness).[1]

The third approach to leadership is the contingency or situational approach. This approach tries to combine information about the leader and the situation in which he finds himself. Fiedler's Contingency model,[2] and House and Mitchell's Path Goal Theory of Leadership,[3] are representative of the situational approach.

Likert's Conceptualization of the Management system is based on studies of managerial leadership. These studies were designed to measure those behaviors that are most

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[1] Ibid., p. 288.

[2] F. E. Fiedler research since 1951 resulted in the development of "The Contingency Model of Leadership Effectiveness." See F. E. Fiedler, A Theory of Leadership Effectiveness (New York: McGraw-Hill Book Co., 1967); also, "Style or Circumstances: The Leadership Enigma," in Psychology Today, March 1969, pp. 38-43.

[3] R. J. House and T. R. Mitchell, "Path Goal Theory of Leadership," Journal of Contemporary Business, 3 (1974), pp. 81-98. Also, see R. J. House, "A Path Goal Theory of Leadership Effectiveness," Administrative Science Quarterly, 16 (1971), pp. 21-38.

effective in accomplishing organizational goals. Thus, only those studies that are pertaining to the behavioral approach to leadership are relevant to this study and will be reviewed.

The Behavioral Approach to Leadership. The Ohio State Leadership studies, the University of Michigan studies, and Blake and Mouton's "Managerial Grid" can be viewed as representative of this behavioral approach.

The Ohio State leadership studies commenced in 1945 at the Bureau of Business Research, under the direction of Carroll Shartle.[1] The researchers' first task was the construction of an instrument for describing leadership. The result was the development of the Leadership Behavior Description Questionnaire (LBDQ), which measures group members' responses of how often their leader uses particular behaviors.[2]

The major finding of the Ohio State studies was that leadership behavior could be classified into two independent orthogonal factors or dimensions. These two central factors are: "initiating structure" and "consideration." Initiating

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[1]C. L. Shartle, Executive Performance and Leadership (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1956).

[2]J. K. Kemphill and A. E. Conns, "Development of the Leadership Behavior Description Questionnaire," in R. M. Stogdill and A. E. Conns (eds.), Leader Behavior: Its Description and Measurement (Research Monograph No. 88, Columbus, Ohio: Bureau of Business Research, The Ohio State University, 1957), pp. 6-38.

structure concerns managerial behavior that defines organizational relationships, channels of communication, and ways of accomplishing tasks. Consideration concerns managerial behavior that is indicative of friendship, respect, warmth and mutual trust.[1] Both dimensions were found to be important.

> Thus, the Ohio State leadership studies seem to conclude that the high initiating structure and high consideration style is theoretically the ideal or "best" leader behavior, while the style low on both dimensions is theoretically the worst.[2]

Beginning in 1947, the University of Michigan's Survey Research Center conducted extensive leadership research. The researchers were studying leadership behavior by locating clusters of characteristics that are correlated positively among themselves and correlated with criteria of effectiveness. These studies identified two concepts called "employee orientation" and "production orientation." Employee orientation concerns leadership behavior which stresses the relationships aspect of the job. Employee oriented leaders feel that every employee is important, with personal needs and individual personality. Production orientation concerns leadership behavior which emphasizes production and the technical aspects of the job. Employees are seen as means to accomplish assigned tasks. Researchers at first viewed

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[1]Hersey and Blanchard, Management of Organizational Behavior, p. 94.

[2]Ibid., p. 98.

these two concepts as opposite poles of the same continuum, but on the basis of more studies they are considered as two independent dimensions.[1]

Cartwright and Zander's studies at the University of Michigan's Research Center for Group Dynamics resulted in describing leadership behavior in terms of two sets of group functions. First, group maintenance functions, which concern managerial behavior that keeps interpersonal relations pleasant, resolves disputes, gives everyone an equal chance to be heard, stimulates self-direction and enhances interdependence among members. Second, goal achievement functions, which concern managerial behavior that initiates action, develops a procedural plan, keeps members' attention on the goal, evaluates production quality and supplies expert information.[2]

Likert, in the New Patterns of Management, building on the findings of the Survey Research Center and the Research Center for Group Dynamics, describes five conditions for effective leadership behavior. First, the "Principle of Supportive Relations," which states that

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[1]D. G. Bowers and S. E. Seashore, "Predicting Organizational Effectiveness with a Four-factor Theory of Leadership," in W. E. Scott and L. L. Cummings (eds.), Readings in Organizational Behavior and Human Performance (Homewood, Ill.: Richard D. Irwin, Inc., 1973), p. 443.

[2]Ibid., p. 444.

> The leadership and other processes of the organization must be such as to ensure a maximum probability that in all interactions and all relationships with the organization each member will, in the light of his background, values, and expectations, view the experience as supportive and one which builds and maintains his sense of personal worth and importance.[1]

The second condition for effective leadership behavior according to Likert is "Group Method of Supervision," which states that:

> Management will make full use of the potential capacities of its human resources only when each person in an organization is a member of one or more effectively functioning work groups that have a high degree of group loyalty, effective skills of interaction, and high performance goals.[2]

The third condition for a supervisor to be an effective leader is to have "high performance goals." Likert states that:

> If a high level of performance is to be achieved, it appears to be necessary for a supervisor to be employee-centered and at the same time to have high performance goals and a contagious enthusiasm as to the importance of achieving these goals.[3]

The fourth condition for effective leadership is "technical knowledge." Likert's description of this supervisor's behavior is as follows:

> The leader has adequate competence to handle the technical problems faced by his group, or he sees that access to this technical knowledge is fully provided.

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[1] R. Likert, New Patterns of Management, p. 103.

[2] Ibid., p. 104.

[3] Ibid., p. 8.

> This may involve bringing in, as needed, technical or resource persons. Or he may arrange to have technical training given to one or more members of his group. . . .[1]

The fifth condition for effective leadership behavior is "coordinating, scheduling, and planning." Likert's description of this process is as follows:

> The leader fully reflects and effectively represents the views, goals, values, and decisions of his group in those groups where he is performing the function of linking his group to the rest of the organization. He brings to the group of which he is the leader the views, goals, and decisions of those other groups. In this way he provides a linkage whereby communication and the exercise of influence can be performed in both directions.[2]

Blake and Mouton's "Managerial Grid" shows that various blends of leadership style are possible. On the grid five different styles of leadership are identified. The differentiation is based on two dimensions of leadership behavior, concern for production (task) and concern for people (relationship). The horizontal axis represents concern for people. The scale chosen for both axes is 1 through 9. The five different styles are described as follows:

> Impoverished (1,1). Exertion of minimum effort to get required work done is appropriate to sustain organizational membership.
> Country Club (1,9). Thoughtful attention to needs of people for satisfying relationships leads to a comfortable, friendly organization atmosphere and work tempo.
> Task (9,1). Efficiency in operations results from arranging conditions of work in such a way that the human elements interfere to a minimum degree.

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[1] Ibid., p. 171.

[2] Ibid., p. 171.

Middle-of-the-road (5,5). Adequate organization performance is possible through balancing the necessity to get out work while maintaining morale of people at a satisfactory level.

Team (9,9). Work accomplishment is from committed people; interdependence through a "common stake" in organization purpose leads to relationships of trust and respect.[1]

Blake and Mouton advocate the team (9,9) style of managerial behavior, which assumes that there is no inherent conflict between organizational goals to achieve higher productivity and employees' needs. Therefore, the grid in this respect "reflects the urgings of other organizational humanists to build teamwork, self-direction and control, and to design work structures to get commitment from participants."[2]

The Ohio State studies, the Michigan studies, and the managerial grid of Blake and Mouton have basically the same approach to managerial leadership. Theoretically speaking, they all contend that there are two basic dimensions of managerial leadership behavior, task orientation and relationship orientation. Above all, the Michigan studies and the managerial grid advocate a developmental participative approach to leadership behavior, that takes into consideration the potentials that are available within the human organization. Miles called this behavioral approach the "Human Resource Model," and said that "this approach

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[1]R. R. Blake, et al., "Breakthrough in Organization Development," Harvard Business Review (Nov.-Dec. 1964): 136.

[2]D. A. Wren, Evolution of Management Thought, p. 460.

represents a dramatic departure from traditional concepts of management."[1]

The Human Resource model departure from traditional views of management is illustrated first, in its basic assumption about people's abilities and values. People in this model are viewed as reservoirs of untapped resources. Second, participation is not only to improve subordinates' satisfaction and morale, but also it is to improve the decision-making process, thus to improve the productive efficiency of the organization. Third, the Human Resource model implies that control is often most effective if exercised by those involved in the work process.[2]

Managerial Leadership as Independent Variable

The behavioral approach to managerial leadership implies a dependency relationship between organizational effectiveness and managerial behavior. Some behavioral scientists, such as McGregor and Likert, view leadership as the most important factor in determining organizational effectiveness. However, researchers such as Dawson, et al., [3] Day and

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[1]R. E. Miles, "Human Relations or Human Resources," in Organizational Psychology: A Book of Readings, D. A. Kolb, et al., (eds.) (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1971), p. 232.

[2]Ibid., p. 232.

[3]J. L. Dawson, J. L. Messe and J. Phillips, "Consideration and Initiating Structure: Instructor-Leader Behavior Influencing Student Performance," Journal of Applied Psychology, 56 (1972), pp. 363-76.

Hamblin,[1] and Greene[2] have all attempted to imply causality between leadership and subordinate behavior, but their conclusions are inconclusive with respect to causality. Korman's review of leadership behavior studies shows also that there is inconsistency between leadership behavior and effectiveness and/or member satisfaction.[3]

The lack of consensus among scholars on the issue of causality between managerial leadership behavior and organizational effectiveness led some to speculate that "the difference in leadership behavior may not be so much in terms of what the leader does but be in terms of how it is interpreted by his subordinates.[4] Therefore, Wynne and Hunsker proposed a "leadership information-processing model," which attempts to focus on the subordinate through his cognitive style and motivation. Specifically, this model proposes to explain how an individual subordinate acquires and uses his perceptions of the situation in an organizational setting

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[1]R. Day and R. Hamblin, "Some Effects of Close and Punitive Style of Supervision," American Journal of Sociology, 69 (1974), pp. 449-510.

[2]C. Greene, "The Path Goal Theory of Leadership: A Replication and Analysis of Causality," paper presented at the 34th Annual Meeting, Academy of Management, Seattle, Washington, 1974.

[3]A. K. Korman, "Consideration and Initiating Structure and Organizational Criteria: A Review," Personnel Psychology, 19 (1966), pp. 349-361.

[4]G. Graen, et al., "Dysfunctional Leadership Styles," Organizational Behavior and Human Performance, 7 (1972), pp. 216-236.

and how these perceptions influence his motivational state.[1]

The thrust of leadership research in the 1970's is mostly toward a contingency approach to the subject. Consideration and initiating structure are still fundamental concepts. But a whole set of situational variables were introduced into the leadership formula. Variables such as leader-member relations, task structure, and position power are thought to be of major importance in leadership effectiveness.[2]

House proposes a theory of leadership which he calls the "Path-Goal Theory of Leadership." This theory attempts to define situationally the relationships between the leader's initiating structure and consideration and the subordinates' performance and work attitudes. According to this approach, the motivational functions of a supervisor are: first, to assure the subordinate's personal rewards for accomplishing work goals, by clarifying the path to their desired rewards and at the same time removing roadblocks to successful work performance. Second, improve the opportunities for work by showing consideration and support for subordinates. Motivation to work hard is a function of the leader's ability to

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[1]B. E. Wynne and P. L. Hunsker, "Human Information Processing Approach to the Process of Leadership," Organization and Administrative Sciences, Vol. 6, Nos. 2-3 (Summer/Fall 1975), pp. 7-25.

[2]F. E. Fiedler, "Style or Circumstance: The Leadership Enigma," Psychology Today (March 1969), pp. 38-43.

enhance valence and expectencies.[1]

The results of research studies on the contingency approaches are not consistent across samples. According to Osborn and Hunt, "Much of the support for contingency leadership theory is built on a pattern of low and at times only marginally significant results."[2] A charge which at times was used against the personal behavioral approach.

The lack of consensus and contradiction in leadership research is of major concern to researchers in the field. Bowers says that part of the problem lies in the research methodology used by many researchers: the use of untested instruments, parochial samples and the lack of acknowledgement of critical moderator variables, such as hierarchial level and type of industry. It is possible to make progress by looking at the simplest of leadership relations, with a standard and tested instrument, from broadly based samples and under some ability to examine moderator variables.[3]

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[1]R. J. House and T. R. Mitchell, "Path-Goal Theory of Leadership," Journal of Contemporary Business, 3 (1974), pp. 81-97.

[2]R. N. Osborn and J. G. Hunt, "An Adaptive-Reactive Theory of Leadership: The Role of Macro Variables in Leadership Research," Organization and Administrative Sciences, Vol. 6, Nos. 2-3 (Summer/Fall 1975), p. 27.

[3]D. G. Bowers, "Hierarchy, Function, and the Generalizability of Leadership Practices," Organization and Administrative Sciences, Vol. 6, Nos. 2-3 (Summer/Fall 1975), pp. 167-168.

In a study of the relationship between leadership, group process and satisfaction of 1683 work groups drawn from 21 organizations, Bowers concludes that:

> The results of this study show that it seems reasonable to conclude that leadership is related to satisfaction and group process. . . . All but one of the coefficients is positive. . . . Leadership which contains more support, interaction facilitation, goal emphasis, and work facilitation is associated in general with greater member satisfaction and better group processes, pretty much regardless of hierarchical level and type of industry.[1]

Organizational Climate

Upper level management of an enterprise establishes structure and formulates policies and procedures, which once established set the behavioral patterns throughout the entire organization.[2] The actions of top management of any organization have a major impact on the character and internal functioning of that organization. Whether an organization is dynamic, mechanical, conservative or risk-taking is basically determined at the upper level of the hierarchy.[3]

> The effect of this impact of the leadership behavior at the top and upper levels of an organization upon all levels of that organization is now being referred to as organizational climate.[4]

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[1] Ibid., p. 177.

[2] D. McGregor, The Human Side of Enterprise, p. 183.

[3] R. R. Blake and J. S. Mouton, Building a Dynamic Corporation Through Grid Organization Development (Reading, Mass.: Addison-Wesley Publishing Co., 1969), p. 35.

[4] R. Likert and J. Likert, New Ways of Managing Conflict, p. 102.

The concept of organizational climate is an attempt by social scientists to describe and understand human behavior in organizational settings. Many researchers view the concept as a meaningful concept, in the sense that it contributes to our understanding of organizational behavior. However, considerable disagreement exists as to what is being measured by available instruments in the field.[1] As is the case with managerial leadership and other concepts in organizational behavior several definitions are available. Tagiuri and Litwin state that:

> Organizational climate is a relatively enduring quality of the internal environment of an organization that (a) is experienced by its members, (b) influences their behavior, and (c) can be described in terms of the values of a particular set of characteristics (or attributes) of the organization.[2]

A similar definition was proposed by Hellriegel and Slocum in which they state that:

> Organizational climate refers to a set of attributes which can be perceived about a particular organization and/or its subsystems, and that may be induced from the

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[1] See R. M. Guion, "A Note on Organizational Climate," Organizational Behavior and Human Performance, 9 (1973), pp. 120-125; L. R. James and A. P. Jones, "Organizational Climate: A Review of Theory and Research," Psychological Bulletin, 81 (1974), pp. 1096-1112; and R. E. Johannesson, "Some Problems in the Measurement of Organizational Climate," Organizational Behavior and Human Performance, 10 (1973), pp. 118-144.

[2] R. Tagiuri and G. H. Litwin (eds.), Organizational Climate: Exploration of a Concept (Boston: Harvard University Press, 1968), p. 27.

way that organization and/or its subsystems deal with their members and environment.[1]

These definitions treat organizational climate as a distinguishable concept in the sense that each organization has its own climate, which characterizes the internal environment, and which influences the behavioral patterns. Organizational climate has some permanence or at least some continuity over time. Tagiuri and Litwin's definition is precise and definitive about the internal environment, while Hellriegel and Slocum's definition is more general about the environment and precise about the perceptual aspect of the climate.

Major Research Issues in Organizational Climate

The major point of concern for organizational climate researchers at the conceptual level is the relationship between organizational climate and performance. However, at the measurement level, the concern is with the distinction between the objective and subjective environment; between the person and the situation; and the determination of those aspects of the environment which need to be specified. The distinction between objective and perceptual measures of the climate is seen by some to be essential because:

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[1]D. Hellriegel and J. W. Slocum, Jr., "Organization Climate: Measures, Research and Contingencies," Academy of Management Journal, 17 (1974), p. 256.

> The two measurement processes of (1) asking an individual how he perceives his environment and (2) defining situational variables a priori and measuring them independently yield variables of a very different order. The central issue is whether the determiner of significant effects is the situation as it actually is or as it is perceived.[1]

The most important aspect of objective climate measures is their accuracy and reliability. Researchers such as Palmer, Evan and Katzell, et al., have studied objective measures such as the levels of authority, ratio of different types of personnel, and the size of the work force. Palmer factor analyzed 21 organizational conditions in 188 organizations. These conditions were reduced to eight independent factors; five of these factors could be defined by both organizational and behavioral measures.[2] However, recent research is mostly directed toward perceptual measures of organizational climate.

Hellriegel and Slocum state that perceptual measures are preferable to more objective areas because (1) objective measures are numerous and too specific to be readily interpreted; (2) the use of objective measures makes it difficult to relate the properties to one another and also how they

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[1] J. Campbell, et al., Managerial Behavior, Performance, and Effectiveness (New York: McGraw-Hill, 1970), p. 389.

[2] See G. J. Palmer, "Test of a Theory of Leadership and Organizational Behavior with Management Gaming," Second Annual Report, Louisiana State University, Contract No. 1575 (15), Office of Naval Research, Group Psychology Branch, 1961; W. M. Evan, "Indices of Hierarchical Structure of Industrial Organizations," Management Science, 9 (1963), pp. 468-477.

are related to the functioning of the organization; and (3) those characteristics that can be measured objectively are removed from behavior and hence, they affect participation in the organization only indirectly.[1]

While Hellriegel and Slocum advocate the use of perceptual measures of organizational climate, they stress the need to study the relationship between perceptually and objectively determined climate measures.[2] This is what Payne and Pugh have done in their review of a variety of convergent validity studies in educational institutions. Perceptual climate measures were found to have some validity and to correlate with objective measures of organizational climate.[3]

The issue of what perceptual measures of organizational climate are actually measuring is being debated in the literature on the subject. The major point of the debate is whether perceptual measures imply an attribute of the organization being measured or the perceiving individual. James and Jones suggested that a distinction should be made between the two and said:

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[1]D. Hellriegel and J. W. Slocum, Jr., "Organization Climate: Measures, Research and Contingencies," p. 260.

[2]Ibid.

[3]R. L. Payne and D. S. Pugh, "Organizational Structure and Climate," in M. D. Dunnette (ed.), Handbook of Industrial and Organizational Psychology (Chicago: Rand McNally, 1976), pp. 1125-1173.

> . . . [I]t is recommended that a differentiation be made between climate regarded as an organizational attribute and climate regarded as an individual attribute. When regarded as an organizational attribute, the term organizational climate appears appropriate. When regarded as an individual attribute, it is recommended that a new designation such as "psychological climate" be employed.[1]

However, Drexler's study of the differences in climate among different organizations and departments within the same organization lends support to those researchers who consider organizational climate to be an organizational attribute. In this study Drexler stated that:

> A large share of the variance in measures of climate that describe organization-wide conditions and procedures is organization specific. While there are differences in organization climate across departments in the same organization, the departmental effects are much weaker than the organizational effects.[2]

Organizational Climate as Independent Variable

Campbell, et al., in their discussion of the relationship between a situation variable (such as organizational climate) and performance, stated that such a relationship "may be conceptualized as an experimental main effect, a prediction (in Correlational Sense), a moderator or some combination of these."[3] However, most of the studies have

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[1]L. R. James and A. P. Jones, "Organizational Climate: A Review of Theory and Research," Psychological Bulletin, 18 (1974), p. 1108.

[2]J. A. Drexler, "Organizational Climate: Its Homogeneity Within Organizations," Journal of Applied Psychology, 62 (1977), pp. 41-42.

[3]J. Campbell, et al., Managerial Behavior, Performance and Effectiveness, p. 413.

tended to consider the organizational climate-performance relationship in only one of these aspects. The following are some of those studies which explore these relationships.

Lawler's, et al., study of 300 scientists in 21 research and development laboratories revealed that, conceptually, organizational climate may be considered as a joint function of organizational structure and organizational processes. Organizational climate is viewed as an intervening variable between structure and process (input) and performance and satisfaction (output).[1]

Frederickson's study of 260 middle managers shows that innovative climates yield greater productivity and more predictable task performance. He also found that employees working in a consistent climate had more predictable performance than those in nonconsistent climates. Administrative behavior tends to be informal and direct in climates which promoted freedom, while it is more formal in restrictive climates.[2]

Kaczka and Kirk, using the data bank of the Institute of Social Research at Ann Arbor, found that performance is affected by organizational climate. Employee-centered organizational climate had higher performance (e.g., lower

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[1]E. E. Lawler, et al., "Organizational Climate: Relationship to Organizational Structure, Process and Performance," Organizational Behavior and Human Performance, 11 (1974), pp. 139-55.

[2]N. Frederickson, "Some Effects of Organizational Climates on Administrative Performance," Research Memorandum RM-66-21, Educational Testing Service, 1966.

unit cost and higher profits) in the majority of cases. However, employee-centered climate yields higher sociological and psychological satisfaction than task-oriented climate.[1]

Pritchard and Karasick, in their study of 76 managers, found that organizational climate was more strongly related to job satisfaction than to job performance. At the same time, highly supportive climate is more likely to be associated with higher job satisfaction regardless of personality differences.[2] Achievement climates tend to foster job satisfaction and the feeling of higher performance than the less motivating climates.[3]

Organizational Effectiveness

The dependent variable in Likert's model shown in Figure 2 is total productive efficiency, which was measured in terms of productivity, costs, scrap loss, earnings, and market performance. In this study, organizational effectiveness is the dependent variable. Measures of this variable

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[1] E. Kaczka and R. Kirk, "Managerial Climate, Work Groups, and Organizational Performance," Administrative Science Quarterly, 12 (1968), pp. 252-271.

[2] R. Pritchard and B. Karasick, "The Effects of Organizational Climate on Managerial Job Performance and Job Satisfaction," Organizational Behavior and Human Performance, 9 (1973), pp. 110-119.

[3] T. Cavsey, "The Interaction of Motivation and Environment in the Prediction of Performance Potential and Satisfaction in the Life Insurance Industry in Canada," paper presented at the 16th Annual Midwest Academy of Management Meeting, Chicago, Illinois, April 1973.

are based on the search of the literature of the studies and models dealing with this concept.

The concept of organizational effectiveness is encountered in many of the studies and research on organizational management. This is basically due to acceptance by organizational analysts that effectiveness is a basic management endeavor. The major problem with the literature on this subject is the lack of agreement on what organizational effectiveness means, and what criteria must be used for its measurement.

The "classical" school of organization theorists such as Barnard, Fayol, Gulick, Taylor, Urwick, and Weber have all placed major emphasis on determinants of organizational effectiveness. These "classical" theorists' major concern was with the development of a set of prescriptive principles to achieve greater efficiency. However, in recent years, with the development of empirical methods in social sciences, the concern is being directed toward empirical research and conceptualization.

> Organizational analysts have been preoccupied with efforts to systematize the study of organizational performance by precisely specifying the conceptual schemes and methodological techniques employed in empirical research.[1]

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[1]S. Lee Spray, "Organizational Effectiveness: Theory, Research and Utilization Introduction," Organization and Administrative Sciences, Vol. 7, Nos. 1 and 2 (Spring/Summer 1976), p. 14.

Measures of Organizational Effectiveness

The most used measures of effectiveness are: (1) performance--measured by employee and supervisory ratings; (2) productivity--measured by output data; (3) employee's satisfaction--measured by self-report questionnaires; (4) profit and rate of return--based on accounting data; (5) withdrawal rate--based on turnover and absenteeism data.[1]

Gibson, et al., after reviewing models and studies of organizational effectiveness, proposed a model in which the element of time was introduced. The underlying assumption for this model is that the test of organizational effectiveness is not only its ability to produce, but also its ability to sustain itself in the environment. Therefore, survival is the ultimate measure of organizational effectiveness; Figure 3 shows this model. Argyris argued that in order to survive, an organization must adapt to the external environment, thereby maintaining its internal parts. This adaption is done either by changing its internal arrangement and objectives or by striving to change the environment.[2]

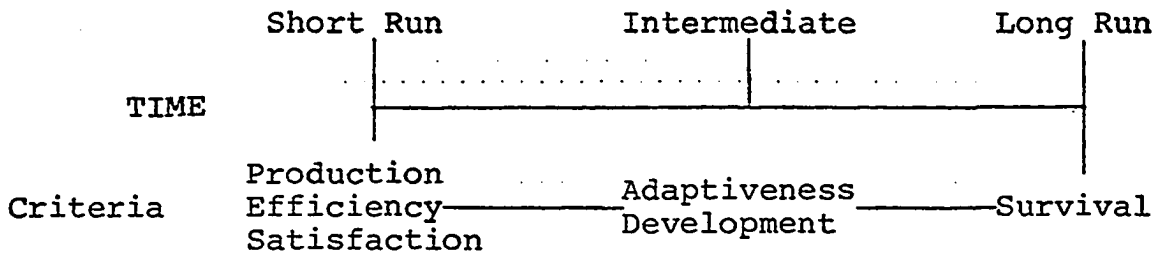
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[1]R. M. Steers, "Problems in Measurement of Organizational Effectiveness," Administrative Science Quarterly, 20 (December 1975), pp. 546-547.

[2]C. Argyris, Integrating the Individual and the Organization (New York: Wiley, 1964), pp. 115-145.

FIGURE 3

Criteria of Effectiveness and Time[1]



Studies by Georgopoulos and Tannanbaum, Bennis, Price, Schein, Mott, Duncan, and Webb have all included flexibility or adaptability in their criteria for organizational effectiveness. Steers reviewed 17 models of effectiveness and found a lack of consensus among them as to what constitutes a useful and valid set of organizational effectiveness measures. Steers found that the most frequent measures are adaptability-flexibility, productivity and satisfaction, in that order. Adaptability and flexibility were found to be in more than half of the models.[2]

Although there is no one set of measures or criteria of organizational effectiveness acceptable to everyone, it is possible to select several measures from those most used by scholars and use them as indicators of directionality of effectiveness. In this study the organizational effectiveness

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[1]From Gibson, et al., Organization: Structures, Processes and Behavior (Dallas: B.P.I., 1973), p. 37.

[2]R. M. Steers, "Problems in Measurement of Organizational Effectiveness," pp. 546-557.

(dependent variable) was measured by those measures found to be most dominant as reported by Steers. The same measures were proposed by Gibson's, et al., model with the exception of "development." These measures are adaptability, productivity, and satisfaction.

Transfer of Management Concepts

The recognition of the importance of management as the most critical element in industrial growth and development raised the question of transferability of management concepts and of people, ideas and techniques across national boundaries. For the past two decades or so, social scientists have studied management and organizational behavior around the world. These studies are called comparative management, cross-cultural research, and international business.

Negandhi and Robey identified three strategies which are guiding current research in comparative management: (1) a concern for economic development; (2) a macro-environmental approach; and (3) a behavioral approach. The economic development concern is based on the premise that managerial input is basic to achieve rapid industrial and economic progress in developing countries. Harbison and Myers' study in 1959 was a major contribution to this view. The macro-environmental approach attempts to highlight the influence of the external environmental factors such as educational, socio-economic, political, and legal on management practices and

effectiveness. Farmer and Richman's study in 1964 and their proposed model for comparative management is a major contribution. The basic premise is that management practices and effectiveness depend on the external variables. The behavioral approach attempts to explain behavioral differences in organizations as a function of the cultural influences. The basic assumption is that attitudes, values, beliefs and needs hierarchies are culturally determined. Negandhi and Robey contend that:

> Research findings generally support the behavioral concern in comparative management. Attitudes, beliefs and values are different in different societies. However, the application of this knowledge to management of organizations is limited by a variety of conceptual and methodological problems.[1]

There are diverging views as to the transferability of management abilities, skills, or of managers themselves and one cannot get a definite view. Those who claim that management is culture-bound contradict themselves. For example, Gonzalez and McMillan, after conducting a study in Brazil in 1961, say that American management experiences abroad provide evidence that our uniquely American management philosophy is not universally applicable, but is a rather special case. At another juncture, the same authors state that:

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[1]A. R. Negandhi and D. Robey, "Understanding Organizational Behavior in Multinational and Multicultural Settings," Human Resource Management, Vol. 16, No. 1 (Spring 1977), pp. 16-17.

> Transferred abroad, this know-how is first viewed with skepticism. Foreign national employees and partners are slow to respond and understand the American scientific approach to management problems. However, once fully indoctrinated, they accept and support this way of doing things. The superiority of this more objective, systematic, orderly and controlled approach to problems is seen and appreciated.[1]

In 1966 Haire, Ghiselli and Porter conducted a comparative study of managers' attitudes in various countries. The basic question in this research was, "When managers think about managing, are their ideas all pretty much the same or does managerial thinking differ from country to country?" Fourteen countries in North America, Europe, South America and Asia were included in the survey. The results showed a discrepancy between belief in an individual's capacity for leadership and initiative and attitudes about methods of leadership. These researchers found a high degree of similarity in managerial patterns and support for participative managerial practices. They also found that about 25 percent of the variations were associated with national differences which led them to conclude that there is an identifiable determinant of attitudes within each country.[2]

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[1] R. G. Gonzalez and C. McMillan, Jr., "The Universality of American Management Philosophy," Journal of Academy of Management (April 1961), p. 39.

[2] M. Haire, E. E. Ghiselli and L. W. Porter, Managerial Thinking: An International Study (New York: John Wiley and Sons, 1966), p. 1.

Richman and Copen studied managerial practices in India. They sought to answer the question of transferability of managerial approaches from one country to another. Their study revealed that basically managerial practices and techniques, those developed in the United States and other industrialized countries, can be transferred and applied to developing nations such as India. Some of these practices can be transferred intact, others need modification and some must be discarded and replaced by new approaches.[1]

Heller and Porter used the same questionnaire as Haire, et al., to compare the responses of American or English managers. They found the attitudes of the two groups to be similar. The authors concluded that these similarities were noteworthy in view of the differences that exist in the two countries.[2] This also can be taken to indicate the trend toward convergence in managerial thinking around the world.

After reviewing articles written by management scholars in Western Europe, Eastern Europe, Asia, Africa and South America, Massie and Luytjes concluded that:

> There is considerable evidence in the preceding chapters of a trend toward convergence of management processes

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[1]B. M. Richman and M. Copen, International Management and Economic Development (New York: McGraw-Hill Book Co., 1972), p. 662.

[2]F. A. Heller and L. W. Porter, "Perceptions of Managerial Needs and Skills in Two National Samples," Occupational Psychology, Vol. 40, No. 1 (1966), pp. 1-15.

and concepts, despite the wide disparity in management practices, approaches and emphasis.[1]

The elements of convergence in managerial attitudes and practices can be attributed to the following developments. First, the spread of management education promises continued interchange among countries in the development of conceptual models for management. Second, the improved status of managers as a group in many countries has increased the chances that professionalization of management will continue and that will attract more educated people into the profession. Third, although there are different definitions of the scope of management, the managerial functions such as planning, organizing, etc., are thought to be necessary in many countries. Fourth, the spread of modern technology and techniques tends to result in transferability in the methods by which technology is managed. Fifth, all countries have focused attention on the role of management in economic development--particularly the role of management in meeting macro-economic objectives and in promoting overall social welfare. Sixth, regardless of political ideologies, the trend is mostly toward decentralization of authority, and greater participation.[2]

Attempts to study human needs around the world were

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[1]Massie and Luytjes, Management in an International Context, p. 364.

[2]Ibid., pp. 365-366.

made by Porter and his associates.[1] They operationalized Maslow's need classification into the need satisfaction and role perception questionnaire. Several other researchers used the same instrument around the world to assess human needs. Clark and McCabe studied Australian managers,[2] Blunt studied South African managers,[3] and Howell, et al., studied Liberian managers.[4] The results of these studies along with those of Haire's, et al., 1966 study are shown in Table 1. Although the intensity of the measures of dissatisfaction varies among nations, it is clear that the areas of greater dissatisfaction are autonomy and self-actualization. This might explain the trend toward more participation and the consequent sharing of power. Haire, et al., articulated this trend as follows:

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[1]W. L. Porter, "A Study of Perceived Need Satisfaction in Bottom and Middle Management Jobs," Journal of Applied Psychology, Vol. 45, No. 1 (1961), pp. 1-10; "Job Attitudes in Management: I. Perceived Deficiencies in Need Fulfillment as a Function of Job Level," Journal of Applied Psychology, Vol. 46, No. 6 (1962), pp. 375-84; W. L. Porter and E. E. Lawler, Managerial Attitudes and Performance (Homewood, Ill.: Irwin, 1968).

[2]W. A. Clark and S. McCabe, "The Motivation and Satisfaction of Australian Managers," Personnel Psychology, Vol. 25, No. 4 (Winter 1972), pp. 625-38.

[3]P. Blunt, "Cultural and Situational Determinants of Job Satisfaction Amongst Management in South Africa--A Research Note," Journal of Management Studies, 10 (May 1973), pp. 133-140.

[4]P. Howell, et al., "Research Note: Cultural and Situational Determinants of Job Satisfaction Among Management in Liberia," Journal of Management Studies, 12 (May 1975), pp. 225-227.

> All over the world, and in every kind of social institution, people and nations want the opportunity to determine their own fate and realize their own potential. Second, they want it now. In all the rising countries, this immediacy of expectation is a familiar characteristic. . . . Third, the less developed in comparison with the other countries uniformly rank the satisfaction of human needs as being of the highest importance.[1]

TABLE 1

Need Dissatisfaction*

Country	Security	Social	Esteem	Autonomy	Self Actualization	N
South Africa	0.83	0.59	0.79	1.23	1.53	275
England	0.29	0.37	0.42	0.69	1.14	239
United States	0.29	0.38	0.60	0.93	1.20	464
Australia	0.54	0.51	0.59	0.77	1.31	1339
Denmark	0.60	0.54	0.32	0.58	0.75	149
Germany	0.77	0.52	0.62	0.86	1.02	586
France	0.64	0.98	0.63	1.06	1.34	154
Italy	0.79	0.83	0.84	1.21	1.46	267
Liberia	1.60	1.23	1.24	1.61	1.28	130
Argentina	1.15	1.18	0.89	1.34	1.51	198
Chile	1.10	1.14	0.81	1.13	1.25	159
India	0.72	1.19	1.21	1.52	1.58	114

*Adapted from Pedro Howell, et al., p. 226. Higher values indicate greater dissatisfaction.

[1]Haire, et al., Managerial Thinking: An International Study, pp. 175-176.

Conclusion

Relationships between managerial leadership, organizational climate and effectiveness have been reported by many researchers. However, researchers tend to be cautious when it comes to causality. Most of the studies in organizational behavior literature indicate that the most effective management system is the participative developmental approach. Bowers said that research findings show that the system which appears to function most effectively in American industry is participative. Bowers went on to describe the characteristic of this system as one which encourages an open sharing of information, the involvement of members in decisions affecting their lives, group-based and make use of cooperative work teams at all levels.[1] In the mean time, there are other researchers who advocate a contingency approach to management. According to the contingency approach, the management system must fit the kind of industry, the work and the personnel involved. However, current empirical investigation provides no conclusive evidence to support the contingency approach to management.[2]

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[1]D. G. Bowers, Systems of Organizations: Management of the Human Resources (Ann Arbor: The University of Michigan Press, 1977), p. 4.

[2]J. M. Pennings, "The Relevance of the Structural Contingency Model for Organizational Effectiveness," Administrative Science Quarterly, 20 (1975), p. 393.

The developmental participative approach to management as articulated and advocated by Likert seems to be the most promising approach in the development of general principles in organization theory. However, these principles are general in nature and subject to change and improvement when intensive research proves their inadequacies. Likert stated that, "General principles and models must be applied in ways to fit the expectations, skills, values and background of the labor force involved."[1]

Increasing interdependency and cross-cultural exchange; the recognition of the important role that management plays in economic development; the trend worldwide that people want opportunity to determine their own fate which is translated in the need for more autonomy and self-actualization--all these and more are leading toward a convergence in managerial philosophy and practices. The convergence is not toward more autocratic systems, but toward more developmental participative systems.

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[1]R. Likert,"Past and Future Perspectives on Systems 4" A paper presented at the Academy of Management, Orlando, Florida, August 16, 1977, p. 17.

CHAPTER III

THE RESEARCH MODEL, HYPOTHESES AND METHODOLOGY

The purpose of this chapter is to provide a presentation of the research model, definition of the terms, research questions and hypotheses, research methodology, sampling and data collection, research instruments, and statistical procedures for data analysis.

Introduction

In studying organizational behavior, two approaches are common: a macro or a micro view of the organization being studied. The macro approach places the organization as the focus of the inquiry and the individuals and the groups composing the organization in the background. The macro view emphasizes the totality of the organization as a unit and concentrates on its relationships with the larger, social, economic and political environment. In this research a micro view of the organizations under study is taken. The focus is on the groups and individuals. The reasons for selecting the micro view are (1) organizations which are being studied operate under the same social, economic, and political environment, and (2) these organizations also

operate in similar technological environments, namely petroleum and the petrochemical industry.

The Research Model

As stated earlier in Chapter 1, Likert has identified a number of key dimensions to study the human organization of any enterprise. These dimensions were grouped into three categories: first, elements used to measure causal variables which include managerial leadership and organizational climate; second, elements used to measure intervening variables which include peer leadership, group process, and satisfaction; third, the end-result, dependent variable which was measured by productivity, costs, earnings, market performance and scrap loss.

The research model of this study is based on Likert's model with some modification to incorporate Likert's earlier designation of the management system and to introduce organizational effectiveness into the model. Those elements characterized by Likert as causal variables (managerial leadership and organization climate) were grouped into one category called Management System as the independent variable. Those elements which were called intervening variables were reduced to peer leadership and group process because satisfaction (as the review of literature showed in Chapter II) is mostly treated as a dependent variable rather than an intervening variable. Organizational effectiveness, the dependent variable,

is derived from basic studies of organizational effectiveness and includes adaptability, productivity and satisfaction. An explicit representation of an independent, intervening, and dependent variable is provided in the research model, Figure 4. This model shows the specific variables which are the focus of this study.

Definition of Terms

Multinational Organization--An organization with multi-nationalities, where people from different cultural backgrounds engage in an organized endeavor to produce a product or to render a service.

Management System--A pattern of practicies, behavior, and beliefs, as perceived by organizational members and expressed in terms of support, team building, goal emphasis, help with work, communication flow, decision making practices, concern for people, influence on department, motivation and technological adequacy, which are labeled along a continuum from system 1 (exploitive authoritative) to system 4 (participative group).

Elements Used to Measure Causal Variables

Managerial leadership.

Support: The degree to which superiors are friendly, pay attention to what subordinates say and listen to their problems.

Team building: The degree to which superiors encourage

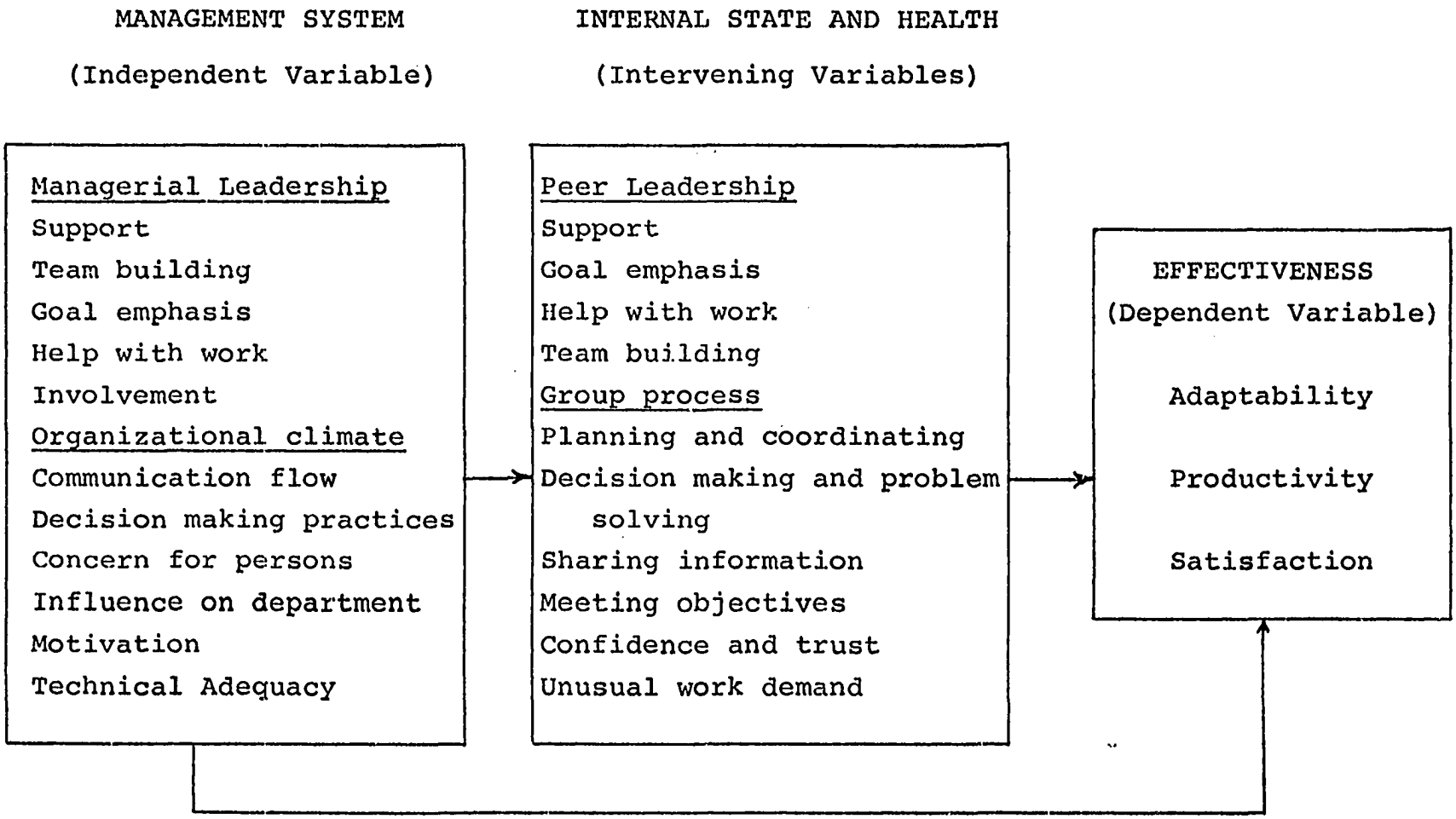


FIGURE 4
The Research Model

subordinates to work as a team and encourage exchange of opinions and ideas.

Goal emphasis: The extent to which superiors encourage best efforts and maintain high standards.

Help with work: Superiors show ways to do a better job; help subordinates plan, organize, schedule, offer new ideas and solutions to problems.

Involvement: The extent to which a superior provides the members of a work group with information about decisions, asks for opinions and ideas, and meets with subordinates as a group to find solutions.

Organizational Climate:

Communication flow: Subordinates know what is going on, superiors are receptive and subordinates are given information to do the jobs well.

Decision-making practices: The degree to which subordinates are involved in setting goals, decisions are made at levels of accurate information, persons affected by decisions are asked for their ideas and know-how of people of all levels is used.

Concern for persons: The extent to which the organization is interested in the individual's welfare, tries to improve working conditions and organize work activities sensibly.

Influence on department: The degree to which lower-level supervisors and employees influence departmental policy.

Technological adequacy: Improved methods are quickly

adapted, and equipment and resources are well used.

Motivation: Differences and disagreements are accepted and worked through. People in an organization work hard for money, promotions, job satisfaction and to meet high expectations and are encouraged to do so by policies, working conditions and people.

Elements Used to Measure Intervening Variables

Peer leadership.

Support: The degree to which co-workers are friendly, pay attention to what others are saying and listen to other people's problems.

Team building: The degree to which employees find encouragement from each other to work as a team, emphasis on team goal and exchange of opinions and ideas.

Goal emphasis: Employees find encouragement from each other to exert their best efforts and maintain high standards.

Help with work: The individual employee shows ways to do a better job, helps others plan, organize and schedule; the group shares with each other new ideas and solutions to problems.

Group process.

Planning and coordinating: The extent to which the work group plans together and coordinates its efforts.

Decision making and problem solving: The extent to

which the group makes decisions and solves problems well.

Sharing information: The extent to which information about important events and situations is shared within the work group.

Meeting objectives: The extent to which the work group really wants to meet its objectives successfully.

Confidence and trust: The extent to which individual employees have confidence and trust in members of their group.

Unusual work demand: The extent to which the work group is able to respond positively to unusual work demands placed upon it.

Elements Used to Measure Effectiveness

As the research model shows, three criteria were selected to measure organizational effectiveness: adaptability, productivity and satisfaction. Adaptability and productivity are thought to be central to effectiveness. Mott's definition of effectiveness, therefore, is more appropriate in this case because it focuses on these criteria. Mott defines effectiveness as, "the ability of an organization to mobilize its centers of power for action--production and adaptation,"[1] where centers of power are thought of as roles and groups.

> Effective organizations are those that produce more and higher quality outputs and adapt more effectively

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[1]P. E. Mott, The Characteristic of Effective Organizations (New York: Harper and Row Publishers, 1972), p. 17.

to environmental and internal problems than do other similar organizations.[1]

One shortcoming of Mott's definition is that it does not take into consideration the element of satisfaction. Therefore, an operational definition is necessary so that all measures of effectiveness can be included: Effective organizations are those that produce more and higher quality products and adapt more effectively to environmental changes, at the same time maintaining a high level of satisfaction of individual members.

Productivity: Employees' perception of the quantity and quality of work done in their divisions or departments, as well as the efficiency with which the work is done.

Adaptability: Employees' perception of their organization's ability to anticipate problems, and find good solutions; organizational search for new technologies and methods; promptness and acceptance of solutions; and ability to cope with temporarily unpredictable overload of work.

Satisfaction: Employees' satisfaction with fellow workers, jobs, superiors, their organization compared with others, pay, progress in the organization so far, and chances for advancement in the future.[2]

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[1] Ibid., p. 17.

[2] Definitions for productivity and adaptability are derived from Mott's, The Characteristic of Effective Organization, p. 20. Definition for satisfaction is from Likert's "Human Resource Accounting," p. 10.

Research Questions and Hypotheses

In order to present research questions and hypotheses in a clear and efficient fashion, several steps are followed. First, the research questions are stated first to focus attention on the major area of inquiry. Second, statements of the substantive hypotheses are made as a prediction of the outcome of the study. Third, a complete set of hypotheses which reflect the operational-experimental meaning of the substantive hypotheses is presented, with the exception of hypothesis I which does not require a statistical testing.[1]

Research Question 1:

What is the management system most predominant in multinational organizations operating in the Arabian Gulf Region?

Hypothesis I:

The most predominant management system in multinational organizations operating in the Arabian Gulf Region is one which approximates system 2 at best and system 1 at worst.

Research Question 2:

Is there a difference between perceived and desired managerial and peer leadership?

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[1]Notations used to state the hypotheses are as follows: M = mean; r = relationship; m = management system; e = effectiveness; and i = internal state.

Hypothesis II:

Indices of managerial and peer leadership are designed to test the degree of adherence to Likert's principles of supportive relationship; group decision-making and group methods of supervision; and high performance goals. Research findings show the desire of people to move in the direction of more participation, which these concepts represent. It is hypothesized, therefore, that the actual mean score will be lower than the desired mean score.

H_2 $M_1 < M_2$ (substantive hypothesis)

H_0 $M_1 = M_2$ (null hypothesis)

Research Question 3:

Is there a relationship between higher management systems (more participation) and organizational effectiveness?

Hypothesis III:

There is a positive relationship between higher management systems and organizational effectiveness as defined in the research model.

H_3 $r_{me} > 0$ (substantive hypothesis)

H_0 $r_{me} = 0$ (null hypothesis)

Research Question 4:

Is there a relationship between management systems and the internal state and health of these organizations?

Hypothesis IV:

A positive relationship exists between a higher management system and the internal state and health of these organizations.

H_4 $r_{mi} > 0$ (substantive hypothesis)

H_0 $r_{mi} = 0$ (null hypothesis)

Research Question 5:

Is there a relationship between the internal state and health of these organizations and effectiveness?

Hypothesis V:

There is a positive relationship between the internal state and health of these organizations and effectiveness.

H_5 $r_{ie} > 0$ (substantive hypothesis)

H_0 $r_{ie} = 0$ (null hypothesis)

Research Methodology

Kerlinger has identified four different categories of social scientific research: (1) laboratory experiment, (2) field experiment, (3) field study and (4) survey research. A laboratory experiment is one that is conducted in a controlled environment, where the researcher manipulates and controls independent variables. A field experiment is similar to a laboratory experiment except it is done in a more realistic situation. Field studies are ex post facto studies

into the relationships and interactions among variables in real social structures. Survey research is a method for studying population by selecting samples from those populations to discover the relative incidence, distribution and interrelationships of specific variables.[1]

According to the categorization above, it is possible to classify this study as a field study, using a survey research method. It is an exploratory and hypothesis testing study. It is exploratory in the sense that an attempt was made to identify what management system is most predominant in multinational organizations operating in the Arabian Gulf Region. It is hypothesis testing in the sense that the researcher seeks to establish relationships between management systems and organizational effectiveness as defined in the research model.

Sampling

According to Kerlinger, "Sampling is taking any portion of a population or universe as representative of that population or universe."[2] Implied in this definition is the researcher's assumption that his sample is representative, which may or may not be the case. Samples can be be broadly classified into two categories: probability samples, where

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[1]F. N. Kerliner, Foundation of Behavioral Research, 2nd ed. (New York: Holt, Rinehart, Winston, Inc., 1973), pp. 395-410.

[2]Ibid., p. 118.

a random sampling method is used in one or more of their stages, and nonprobability samples, where random sampling is not used. One form of nonprobability sampling is purposive sampling, which is characterized by using judgment to obtain representative samples by including typical areas or groups in the sample.[1]

In this study it is possible to characterize the sampling procedure as purposive sampling, with three sample spaces as the focus of this study. The first sample space is multinational organizations operating in the Arabian Gulf Region. The second sample space is organizations engaged in the petroleum and petrochemical industry. The third sample space is upper level management in these organizations. Upper level management in this study refers to those managers supervised by the chief executive officer and the second level managers supervised by those in the first group.

The population from which the sample was drawn consists of ten organizations operating in four countries: Baharian, Kuwait, Saudi Arabia and the United Arab Emirates. The sample includes the major producers, refiners, petrochemical and marketing organizations. In order to enhance the success of this study and to encourage participation and accuracy of measurement, participating organizations were promised their names would be kept anonymous. Therefore, an alphabetic designation is used for each organization.

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[1]Ibid., p. 129.

Data Collection

A survey may be conducted in several ways: through personal interviews, panels, telephone interviews, mailed questionnaires, and other techniques. In this study two methods were primarily used to collect the data: (1) group sessions, where members of individual administrative units were scheduled for a one hour meeting with the researcher to complete the questionnaire, and (2) interview sessions with those executives who were not able to attend group sessions. These interviews were also for the purpose of completing the questionnaire. One organization thought the group session would be time consuming, and preferred to send the questionnaire through the company internal mail and collect the sealed questionnaires through a coordinator assigned for this purpose.

Several steps were followed in order to accomplish the task of data collection. Step 1, initial contact, was made with top management in each organization, where the researcher introduced himself and explained the purpose and objectives of the study. Step 2, in cooperation with each organization's designated coordinator, the researcher planned daily meeting sessions with various groups and individuals in each organization. Step 3, the administration of the questionnaire was conducted by explaining the research model to participants, and responding to questions and inquiries about the research. Confidentiality of individual response

was assured to participants.

The response from group sessions and personal interviews was 100 percent for eight of the ten participating organizations; that is, all instruments distributed in these sessions were completed and collected by the researcher. However, organization X had chosen to send the questionnaires through its internal mail distribution system, and the responses were delivered in sealed envelopes to the organizations' coordinator who delivered them to the researcher. Table 2 shows organizations' alphabetic designation, industry type, number of questionnaires distributed, questionnaires collected and usable questionnaires.

TABLE 2

Organization, Type and Response Rate

Organization	Type*	Questionnaires Distributed	Questionnaires Collected	Questionnaires Usable Number & Percent
X	P	94	77	72 (76%)
Y	P	43	43	39 (90%)
Z	P	39	39	37 (94%)
O	P	27	27	23 (85%)
A	PC	27	23	23 (85%)
G	PC	31	31	31 (100%)
C	PC	38	38	36 (95%)
M	M	24	24	21 (87%)
N	M	28	28	27 (95%)
B	M	30	30	28 (93%)

*Type: P = Production; PC = Petrochemical; and M = Marketing.

Research Instrument

One of the most difficult tasks which a researcher in the social sciences encounters is the selection of an instrument that is both valid and reliable to measure research variables. For this study two instruments were selected and combined in one research questionnaire. Both of these two instruments were developed and tested for validity and reliability by experienced researchers. The following is a presentation of these two instruments.

The Management System (independent variable), and Internal State and Health (intervening variable) test instrument. There are two major instruments available to measure organizational practices and behavior: first, the Survey of the Organizations questionnaire which is a machine-scored, standardized instrument developed since 1966 by the Organizational Development Research Program of the Center for Research on Utilization of Scientific Knowledge, Institute for Social Research at the University of Michigan[1]; and second, the Organization Description Questionnaire (ODG), which was developed by House-Rizzo.[2]

The Michigan instrument seems to be the most

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[1]J. C. Taylor and D. G. Bowers, Survey of Organizations (Ann Arbor, Michigan: Institute for Social Research, 1972).

[2]R. J. House and J. R. Rizzo, "Toward the Measurement of Organizational Practices: Scale Development and Validation," Journal of Applied Psychology, Vol. 56, No. 5, 1972, p. 388.

appropriate instrument for this study because of the following: first, the management system concept and the major portion of the research model was the product of Likert and his associate researchers at the I.S.R. Second, the questionnaire taps certain critical dimensions of organizational leadership, organizational climate, peer leadership, group process and satisfaction which are the focus of this study. Third, the questionnaire in some form or another was tested in different countries other than the United States of America. Following are some of these studies.

The earlier version of this instrument in a shortened form was used to measure organizational characteristics by Butterfield and Farris in Brazilian bank organizations. The questionnaire was administered in group sessions for thirteen organizations. The researchers found that actual and ideal bank profiles were similar to those found in the United States: employees wanted participative group management systems and they said that their organizations used autocratic or consultive methods. Butterfield and Farris concluded that "results of the present study suggest that the Likert organizational profile may be a useful instrument . . . even if system 4 theory is only partially supported in Brazil."[1]

Studies by Jerovesk, et al., and Kaucic, et al., in

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[1]D. A. Butterfield and G. F. Farris, "The Likert Organizational Profile Methodological Analysis and Tests of Systems and Theory in Brazil," Journal of Applied Psychology, Vol. 59, No. 1, 1974, pp. 15-23.

Yugoslavia, where organizational profile was used to investigate the applicability of system 4 management in Yugoslavia, show that organizations in which system 4 management was reflected in their profile were more successful.[1] Other studies in Sweden and Japan confirm the pattern of findings that most successful organizations use system 4 management.[2]

Organizational Effectiveness (dependent variable) test instrument. As stated earlier three criteria were selected to be used as measures of organizational effectiveness: adaptability, productivity, and satisfaction. Mott has developed an instrument to measure organizational effectiveness in terms of productivity, adaptability, and flexibility. Flexibility was a special case of adaptability. Although a perceptual approach to the measurement of productivity might be open to some questions, it is a useful device to use in cases where the measurement of objective data such as costs and output is not possible.

Mott's perceptual measures have several advantages: (1) they are convenient to use and administer; (2) they provide results which are comparable across varying types of organizations; and (3) they may be less expensive than other types of measures. This instrument also is based on a scale of 1-5 with 5 as the most effective, so it provides a basis

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[1] R. Likert and J. G. Likert, New Ways of Managing Conflict (New York: McGraw-Hill Book Co., 1976), pp. 89-94.

[2] Ibid., pp. 94-95.

for comparison with the first instrument, i.e., Survey of Organizations. This instrument was used to measure adaptability and productivity, while satisfaction was measured by the first instrument.

It is worth noting that this instrument has been used in six separate studies: (1) twelve divisions of the National Aeronautics and Space Administration (NASA); (2) ten community general hospitals; (3) an anonymous federal administrative agency; (4) the financial management office of the Department of Health, Education and Welfare (HEW); (5) a Pennsylvania State Mental Health Hospital; and (6) a part of the administrative office of the U.S. State Department.[1]

The two above instruments were combined into one research questionnaire which includes 94 items as can be seen in Appendix A. The portion used from the Michigan instrument includes items 1 to 85, while Mott's instrument includes items 87 to 94. Item 86 designates the part of the world (Middle East, Far East, Europe, North America, South America, and others) in which the respondent lived and was educated up to 25 years of age. The purpose of item 86 was to answer the question of whether there is a regional difference in the perception of the management system.

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[1]P. E. Mott, The Characteristics of Effective Organizations, pp. 25-34.

Items and Indices in the Instrument Corresponding To the Research Model

In accordance with the definition of the terms specified in the research model, nineteen indices were used to measure the components of managerial leadership, organizational climate, peer leadership, group process, adaptability, productivity, and satisfaction. Eight other indices were also used to measure participants' desire for change in the present management system. The purpose of these latter indices was to use them with some of the first indices to compare the perceived and desired management system in the sample data. Appendix B shows items and indices in the research instrument corresponding to this research model.

Although indices for managerial leadership, climate, peer leadership, group process, and satisfaction have been tested for validity and reliability by Taylor and Bowers[1] and indices for adaptability and productivity have been tested by Mott,[2] a reliability test was conducted for these indices to enhance their credibility. Cronbach's alpha was calculated for each index, because it measures the coefficient of equivalence, showing how nearly two measures of the same

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[1] J. C. Taylor and D. G. Bowers, Survey of Organizations (Ann Arbor, Michigan: Institute for Social Research, 1972).

[2] P. E. Mott, The Characteristics of Effective Organizations, pp. 25-34.

general trait agree.[1] Tables 3, 4 and 5 show Pearson Correlation Coefficients for indices in the research model, with coefficient alphas on the diagonal. Alpha shows how much each index score depends upon general and group factors rather than item-specific factors.[2] For instance, alpha is .76 for support, i.e., 76 percent of the variance in the equally weighted composite is due to a common factor among the items measuring support.

The question of how large alpha should be for an index to be reliable is not consistent among researchers; however, some consider alpha at .70 to be a good criterion for adequate scale reliability.[3] Table 3 shows that five indices, communication flow, concern for persons, influence on department, motivation, and technical adequacy, have failed to meet the .70 criterion. However, most of these indices still have more than 40 percent which depend upon group rather than item specific factors.

Since the reliability coefficient alphas for the multi-item indices are mostly greater than the Pearson Correlation Coefficients, it was possible to create mega indices

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[1]L. J. Cronbach, "Coefficient Alpha and the Internal Structure of Tests," Psychometrika, Vol. 6, No. 3, September 1951, p. 298.

[2]Ibid., p. 320.

[3]P. M. Muchinsky, "Organizational Communication: Relationships to Organizational Climate and Job Satisfaction," Academy of Management Journal, Vol. 20, No. 4 (December 1977), p. 596.

TABLE 3

Pearson Correlation Coefficients for Indices and Mega Indices of Management System with Coefficient Alphas on Diagonal

Management System Indices and Mega Indices	Support	Team building	Goal emphasis	Help with work	Involvement	Mega Index (ML)	Communication flow	Decision making practices	Concern for persons	Influence on department	Motivation	Technical adequacy	Mega Index (CL)
Support	(.76)												
Team building	.63	(.76)											
Goal emphasis	.71	.72	(.80)										
Help with work	.55	.65	.76	(.82)									
Involvement	.42	.69	.68	.55	(.86)								
Mega Index (ML)*	.76	.89	.89	.83	.79	(.90)							
Communication flow	.33	.42	.46	.45	.42	.49	(.62)						
Dec. making practices	.31	.35	.30	.29	.41	.39	.51	(.79)					
Concern for persons	.28	.39	.38	.25	.39	.42	.65	.56	(.58)				
Influence on Dept.	.22	.39	.34	.40	.33	.40	.37	.41	.32	(.43)			
Motivation	.30	.37	.28	.25	.42	.39	.49	.46	.59	.46	(.48)		
Technical adequacy	.15	.38	.39	.34	.47	.41	.45	.29	.45	.19	.38	(.28)	
Mega Index (CL)**	.37	.52	.88	.45	.56	.69	.81	.75	.83	.60	.75	.63	(.82)

*Combined Index for Managerial Leadership.
**Combined Index for Organizational Climate.

TABLE 4

Pearson Correlation Coefficients for Indices and Mega Indices Of Internal State and Health with Coefficient Alphas On Diagonal

Internal State and Health Indices and Mega Indices	Support	Goal Emphasis	Help with Work	Team Building	Mega Index (PL)*	Group Process**
Support	(.70)					
Goal emphasis	.68	(.62)				
Help with work	.52	.76	(.85)			
Team building	.51	.71	.77	(.80)		
Mega Index (PL*)	.75	.91	.90	.88	(.88)	
Group Process**	.58	.67	.61	.68	.73	(.82)

*PL Combined Index for Peer Leadership.

**Items 76 to 80 constitute one index for group process.

TABLE 5

Pearson Correlation Coefficient for Effectiveness Indices And Mega Index with Coefficient Alpha on Diagonal

Effectiveness Indices and Mega Index	Adaptability	Productivity	Satisfaction	Mega Index (EFF)*
Adaptability	(.74)			
Productivity	.62	(.73)		
Satisfaction	.34	.29	(.76)	
Mega Index (EFF)*	.51	.42	.46	(.70)

*EFF Combined Index for Organizational Effectiveness Measures.

for managerial leadership, organizational climate, peer leadership, group process, and effectiveness. These mega indices were created in order to simplify the presentation of the results. Table 6 shows means, standard deviations for the 19 indices involved in the research model as well as their five mega indices, plus the internal consistency reliability alphas for the multi-item indices. It can be seen from this that all but six indices meet a .70 criterion for adequate scale reliability, however, all of the mega indices meet this criterion.

Data Analysis

Choosing the appropriate statistical procedure for analyzing a set of data basically depends on (1) the kind of data the statistical procedures are to be applied to, (2) the researcher's hypotheses, and (3) whether the investigator considers the data a sample or a population. Many statistical techniques are available to use when the data are sources or measures; however, the choice is limited to fewer techniques when observations can only be ranked or classified into categories. In cases where the data constitute a population, only descriptive statistics are needed to present research results, but data which represent a sample require inferential as well as descriptive statistics.[1]

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[1] V. Gourveitch, Statistical Methods: A Problem-solving Approach (Boston: Allyn & Bacon, Inc., 1965), pp. 271-272.

TABLE 6

Means, Standard Deviations and Reliability Alphas Of the Five Major Variables and their Indices

Variables	Mean	Standard Deviation	Reliability Alpha
MANAGERIAL LEADERSHIP (ML)			
Support	3.82	0.59	0.76
Team building	3.37	0.73	0.78
Goal emphasis	3.55	0.78	0.80
Help with work	2.89	0.75	0.82
Involvement	3.16	0.71	0.86
Mega Index (ML)	3.33	0.69	0.90
ORGANIZATIONAL CLIMATE (CL)			
Communication flow	3.18	0.53	0.62
Decision making practices	3.06	0.53	0.79
Concern for persons	3.30	0.51	0.58
Influence on department	2.96	0.40	0.43
Motivation	3.44	0.39	0.48
Technical adequacy	3.25	0.46	0.28
Mega Index (CL)	3.17	0.47	0.82
PEER LEADERSHIP (PL)			
Support	3.77	0.43	0.70
Goal emphasis	3.29	0.51	0.62
Help with work	2.98	0.60	0.85
Team building	3.03	0.58	0.80
Mega Index (PL)	3.24	0.57	0.88
GROUP PROCESS	3.54	0.44	0.82
ORGANIZATIONAL EFFECTIVENESS (EFF)			
Adaptability	3.41	0.44	0.74
Productivity	3.57	0.40	0.73
Satisfaction	3.61	0.47	0.76
Mega Index (EFF)	3.49	0.49	0.70

The data in this study from all variables are in numerical scores and represent a sample. With the exception of Hypotheses I and II, all hypotheses are stated in a way which seeks to determine relationships and specifically linear-relationships. Therefore, the problem was identified as a correlation-regression problem. The basic research posture is to show whether there are relationships between the independent, dependent, and intervening variables stated in the research model, also, to go further and predict the value of the dependent variable from the independent using a linear rate. In correlation analysis there is no clear-cut distinction between dependent and independent variables, however, in regression analysis one or more variables are clearly the independent variables.[1]

A researcher may select a parametric or nonparametric statistical procedure depending on the assumption that he makes about the population from which the sample is drawn. Some researchers view parametric procedures as the standard tool of psychological statistics.[2] Meanwhile, there are others who prefer to use nonparametric tests because they have less stringent assumptions than parametric tests. Assumptions of normality and homogenity of variance are some

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[1] W. L. Hays, Statistics (New York: Holt, Rinehart & Winston, 1963), pp. 490-495.

[2] N. Anderson, "Scales and Statistics: Parametric and Nonparametric," Psychological Bulletin, Vol. 58, 1961, p. 315.

of these assumptions which are major in parametric statistics, nevertheless, Kerlinger considers these to be overrated and suggests that:

> Unless there is good evidence to believe that populations are rather seriously nonnormal and that variances are heterogeneous, it is usually unwise to use a nonparametric statistical test in place of a parametric one. The reason for this is that parametric statistical tests are almost always more powerful than nonparametric tests.[1]

There is no reason to believe that the population in this study is nonnormal or the variance to be heterogeneous, therefore parametric statistics were used to analyze and test the data. Likert, as well as other Michigan researchers, has used means in the analysis of data he has collected with the test instruments. Since the researcher has selected the same instrument with only minor modification, means were used to calculate the independent variable (management system) as well as the intervening variable (internal state and health), and the dependent variable (effectiveness).

Statistical Procedures

Several statistical procedures were used in accordance with research questions and hypotheses. Hypothesis I predicts that the management system most predominant in organizations surveyed would be system 1 or system 2. This hypothesis does not require a statistical testing. Mean scores were used for this hypothesis to classify management

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[1]F. N. Kerlinger, Foundation of Behavioral Research, p. 287.

systems as 1 - 4 according to the following range which was used by Likert.[1]

System 1 = 1.00 - 1.99

System 2 = 2.00 - 2.99

System 3 = 3.00 - 3.99

System 4 = 4.00 - 4.99

Hypothesis II predicts that the perceived mean scores for indices of managerial and peer leadership would be lower than the desired mean scores for these indices. The statistical test employed to evaluate this hypothesis was the student's t-statistic. These tests are thought to be appropriate for analysis of means for paired observations. In this case each index has two observations: this is how it is now; and this is how a respondent would like it to be. The hypothesis, H_2: $M_1 < M_2$ is a one-tailed test and the t-values are expected to be negative. A significance level of .95 was selected ($p < .05$) which is an acceptable level used by many researchers employing the t-statistic.

Hypotheses III, IV, and V predict a positive relationship between management system and organizational effectiveness; management system and internal state and health; and internal state and health and effectiveness, respectively. As stated earlier, the problem for these hypotheses was identified as a regression-correlation problem. The Pearson

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[1] R. Likert, The Human Organization, p. 36.

Product-moment Correlation procedure was selected and the Pearson coefficient r was used to measure the strength of relationship between each pair of variables stated in these hypotheses. Multiple regression analysis was also used to determine the strength of the dependency relationship between management system and organizational effectiveness.

All statistical procedures were conduced by utilizing the Statistical Package for the Social Sciences (SPSS) on the University of Oklahoma IBM 370/158 Computer.[1]

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[1]N. H. Nie, et al., Statistical Package for the Social Sciences, 2nd ed. (New York: McGraw-Hill, 1975).

CHAPTER IV

RESEARCH FINDINGS AND ANALYSIS

The purpose of this chapter is to provide a systematic presentation of statistical analysis of the data collected for this study. Statistical tabulation, tests and figures are presented in a manner which attempts to answer the stated research questions and to prove or disprove the stated hypotheses, along with an interpretation of these findings.

Introduction

Research findings and analysis represent the heart of any research activity, since it represents the researcher's contribution to the discipline under investigation. Research hypotheses are usually based on scientific evidence reported by researchers in the field which the researcher attempts to investigate in a new context. Therefore, nothing would please a researcher more than to confirm his stated hypotheses about a phenomenon which he has researched and which he claims to know something about. However, the ultimate objective of a scientific inquiry must remain one of search for the "facts" whether they confirm or disprove the

researcher's preconceived ideas and hypotheses.

Social scientists must strive in their search for scientifically oriented disciplines to study and research the social, political and economic phenomena in a manner which enhances our understanding of the complex relationships in this intricate world. Understanding is the first step on the road toward harmony between people and among nations. It is in this spirit of search for "facts" to enhance our understanding of working relationships within multinational organizations that this research was undertaken, and with the same spirit the following presentation is made.

Management Systems Most Predominant in Multinational Organizations Operating in the Arabian Gulf Region

The first objective of this study is to identify management systems in multinational organizations operating in the Arabian Gulf region. Research question 1 addresses this area of inquiry. Hypothesis I, which is a reflection of the research question, predicts that the most predominant management systems in these organizations under study are system 1 and system 2. This hypothesis does not require a statistical testing because mean scores are used to classify management systems.

Table 7 shows perceived management system indices mean scores for each one of the ten organizations. Variations can be seen for mean scores on all indices, however,

TABLE 7

Management System Indices Mean Scores

Management System Dimensions	Organization										TOTAL SAMPLE
	X	Y	Z	O	A	G	C	M	N	B	
Managerial Leadership											
Support	3.94	3.87	4.31	4.30	3.70	3.86	3.63	3.96	3.68	3.53	3.89
Team building	3.43	3.55	3.80	3.73	3.56	3.14	3.33	3.30	3.03	3.13	3.41
Goal emphasis	3.92	3.58	4.00	3.80	3.73	3.50	3.52	3.71	3.16	3.32	3.66
Help with work	3.02	3.74	3.22	3.02	3.44	3.62	2.89	3.20	2.68	2.89	2.95
Involvement	3.32	3.32	3.39	3.53	3.02	2.98	3.39	2.99	3.19	2.90	3.23
Organizational Climate											
Communication flow	3.33	3.26	3.31	3.48	2.98	3.15	3.09	3.17	3.06	3.11	3.21
Decision making practices	3.08	3.16	3.25	3.47	2.79	3.12	3.03	2.83	2.98	2.88	3.07
Concern for persons	3.51	3.62	3.48	3.82	2.75	3.20	3.19	3.18	3.08	3.26	3.35
Influence on dept.	2.54	2.56	2.59	2.57	2.65	2.48	2.48	2.44	2.37	2.47	2.52
Motivation	3.52	3.69	3.63	3.86	3.41	3.34	3.34	3.58	3.32	3.42	3.51
Technical adequacy	3.22	3.53	3.15	3.56	3.26	3.30	3.36	3.14	3.31	3.15	3.29
Mean Score	3.35	3.44	3.46	3.55	3.20	3.24	3.20	3.22	3.07	3.09	3.28
Management System*	3	3	3	3	3	3	3	3	3	3	3

*Management system classification is based on system 1 = 1 - 1.99; system 2 = 2 - 2.99; system 3 = 3 - 3.99; system 4 = 4 - 4.99.

the management system most predominant in these organizations is system 3, the "consultative" type rather than the "exploitive authoritative" system 1 or the "benevolent authoritative" system 2 as hypothesis I has predicted. The mean scores for management systems in these organizations range from 3.07 to 3.55, the question is how significant statistically are these differences?

To answer this question, an analysis of variance for mean scores for the management systems and the internal state and health dimensions was conducted to test the significance of the difference between means for these organizations. Table 8 presents the results of this analysis. Mean differences for managerial leadership and organizational climate (the two dimensions of the management system) as well as group process are found to be significant with more than 95 percent confidence. However, peer leadership shows no statistically significant difference. This might imply that there is less variation in the application of the principle of supportive relationships, group method of supervision and group decision-making; and high performance goals at the group level than at the supervisory level among these organizations.

Table 9 presents the results of the student's t-test to compare the sample mean scores for management system indices with the national norms in the United States. The t-values in this table indicate that significant differences

TABLE 8

Analysis of Variance for the Human Organization Dimensions by Organization
Test of Significance Between Means

Variable in the Research Model	Organization										F
	X n=72	Y n=39	Z n=34	O n=23	A n=23	G n=31	C n=36	M n=21	N n=27	B n=28	
Managerial Leadership	3.53	3.42	3.76	3.68	3.48	3.22	3.36	3.44	3.16	3.16	1.99*
Organizational Climate	3.37	3.44	3.42	3.68	2.98	3.21	3.17	3.19	3.12	3.16	3.63*
Peer Leadership	3.23	3.32	3.51	3.37	3.21	3.28	3.36	3.21	3.28	3.21	0.66
Group Process	3.60	3.67	3.88	3.88	3.41	3.68	3.49	3.63	3.44	3.39	2.41*

*Significant at $p < .05$

TABLE 9

T-test to Compare Mean Scores for Management System Indices With National Norms in the United States*

Indices	Sample Mean	Standard Deviation	N	National Norms In U.S.	Standard Deviation	N**	t-value	p = .05
Support	3.89	0.85	335	4.05	0.89	500	2.66	significant
Team building	3.41	1.02	337	3.55	0.92	500	2.15	significant
Goal emphasis	3.66	0.98	335	3.95	0.89	500	4.83	significant
Help with work	2.95	0.99	337	3.15	0.88	500	3.08	significant
Com. flow	3.21	0.71	336	3.34	0.80	500	2.45	significant
Dec. making practices	3.07	0.73	335	3.08	0.80	500	0.25	not significant
Concern for persons	3.25	0.71	337	3.54	0.84	500	3.45	significant
Influence on dept.	2.52	0.62	333	2.78	0.93	500	4.56	significant
Motivation	3.51	0.61	335	3.62	0.71	500	2.39	significant
Tech. adeq'y	3.29	0.67	334	3.48	0.75	500	3.80	significant

*The national norms are compiled by University of Michigan ISR, the scores used here are average scores for levels 4 and 3 which are equivalent to the top two managerial levels in this study; **N is approximately 500 randomly selected cases for U.S. national norms.

with p = .05, are found for all indices with the exception of the decision-making index. The insignificant t-value for the decision-making index indicates that the sample data approximate the national norms in the United States for this index for about the same managerial levels.

In summary, it is appropriate to state that the top management system found to be the most predominant in multinational organizations operating in the Arabian Gulf region is the "consultative" system 3 management. However, statistically significant differences were found between management systems in these organizations under study. The sample data mean scores on indices of management system were found to be below the national norms in the United States, and statistical testing shows these differences to be significant for all indices with the exception of the decision-making practices index.

Regional Differentiation and Perception Of the Management System

Haire, et al., in their study of management systems and practices in fourteen countries found a high degree of similarity in managerial patterns and the degree of support for participative managerial practices.[1] Heller and Porter found the attitudes of a sample of American and English

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[1] M. Haire, et al., Management Thinking: An International Study, p. 1.

managers to be similar.[1] Participants in this study are heterogeneous when it comes to national origin. The question here is whether regional differences have anything to do with the respondents' perceptions of the management system or any other variables in the research model?

To answer the above question, analysis of variance for the human organization dimensions in the research model was conducted. In this analysis, the dependent variables are the mean scores for all dimensions, while the independent variable is part of the world in which the participant lived and was educated up to 25 years of age. Table 10 presents the results of this analysis.

The F-ratios for managerial leadership and organizational climate, the two dimensions used to characterize management system, show no significant statistical differences that can be attributed to regional differentiation. The two dimensions which show statistically significant differences attributed to regional differentiation are those measuring internal state and health (peer leadership and group process). However, close inspection of the mean values for peer leadership and group process shows that the category described as "others" has the lowest scores on these two dimensions, which in the researcher's opinion

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[1]F. A. Heller and L. W. Porter, "Perceptions of Managerial Needs and Skills in Two National Samples," Occupational Psychology, Vol. 40, No. 1 (1966), pp. 1-15.

TABLE 10

Analysis of Variance for the Human Organization Dimensions by Part of the World
Test of Significance Between Means

Variable in the Research Model	Part of the World: Middle East n=152	Far East n=12	Europe n=92	North America n=68	Others n=8	F-ratio	eta^2
Managerial leadership	3.39	3.54	3.51	3.41	3.25	0.47	0.01
Organizational climate	3.29	3.24	3.33	3.24	2.89	1.14	0.01
Peer leadership	3.36	3.32	3.30	3.25	2.52	3.28*	0.04
Group process	3.56	3.75	3.71	3.62	3.03	2.83*	0.03

Note: eta = correlation ratio - index of relation. $Eta^2 = \frac{SS_b}{SS_t}$ indicates the variance shared by independent and dependent variables.

*Significant at $p < .05$.

accounts for the significant F-ratios. The eta^2 values which indicate the variance shares by the independent and dependent variables are rather low in magnitude. In summary, it is appropriate to state, with more than 95 percent confidence ($p < .05$), that regional differentiation was found to have statistically insignificant influence on perception of management system or other dimensions of the human organization.

Perceived and Desired Managerial And Peer Leadership

Butterfield and Farris' study in Brazil shows a differential between desired and perceived managerial systems. Those who were surveyed indicated a desire for more participative group management while characterizing their organizations as "exploitive authoritative" or "consultative."[1] Indices for managerial leadership and peer leadership in the research instrument are designed to test whether there are differences between perceived and desired practices in managerial and peer leadership.

Research question 2 probes the existence of a differential between desired and perceived managerial practices along these two dimensions. In the meantime, hypothesis II

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[1] D. A. Butterfield and G. F. Farris, "The Likert Organizational Profile Methodological Analysis and Test of Systems and Theory in Brazil," Journal of Applied Psychology, Vol. 59, No. 1, 1974, pp. 15-23.

predicts that the perceived mean scores would be lower than the desired mean scores on these dimensions of managerial and peer leadership, H_2: $M_1 < M_2$, where M_1 is the perceived and M_2 is the desired mean scores. The null hypothesis which must be rejected in order to substantiate hypothesis II is H_o: $M_1 = M_2$ which means that there is no difference between perceived and desired mean scores.

The statistical test employed to evaluate this hypothesis was the student's t-statistic. These tests are thought to be appropriate for analysis of means for paired observations.[1] Table 11 shows the t-test on perceived and desired managerial and peer leadership. The t-values in this table indicate a significant difference between perceived and desired managerial and peer leadership. The null hypothesis H_o: $M_1 = M_2$ is rejected because $M_1 \neq M_2$. The t-values are found to be negative which also indicates that $M_1 < M_2$ as stated in the substantive hypothesis. In summary, it is reasonable to state, with more than 95 percent confidence ($p < .05$), that a significant statistical difference was found between desired and perceived managerial and peer leadership, and that the desired managerial practices were toward more participative group systems.

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[1] N. H. Nie, et al., Statistical Package for the Social Sciences, p. 267.

TABLE 11

T-Test on Perceived and Desired Managerial and Peer Leadership

Variable		Number Of Cases	Mean	Standard Deviation	Difference Mean	Correlation	t Value
MANAGERIAL LEADERSHIP							
Support:	Perceived	98	3.83	0.59	-0.55	0.67	-12.46
	Desired		4.38	0.37			
Team Building:	Perceived	98	3.39	0.73	-0.91	0.42	-13.22
	Desired		4.28	0.44			
Goal Emphasis:	Perceived	98	3.55	0.78	-0.89	0.36	-12.07
	Desired		4.45	0.41			
Help with Work:	Perceived	98	2.89	0.75	-0.98	0.41	-13.34
	Desired		3.88	0.57			
PEER LEADERSHIP							
Support:	Perceived	98	3.77	0.45	-0.55	0.39	-12.50
	Desired		4.33	0.32			
Team Building:	Perceived	98	3.29	0.51	-1.08	0.04	-16.36
	Desired		4.37	0.42			
Goal Emphasis:	Perceived	98	2.98	0.61	-1.19	0.23	-18.27
	Desired		4.48	0.40			
Help with Work:	Perceived	98	3.03	0.58	-1.20	0.24	-19.47
	Desired		4.24	0.36			

All $p < .05$

Relationship Between Management Systems And Organizational Effectiveness

The second objective of this study is to determine the relationship between management systems and organizational effectiveness as defined in the research model. Research question 3 focuses attention on the possibility of association between higher scores on the management system dimensions and organizational effectiveness dimensions. Hypothesis III predicts a positive relationship between management systems scores and organizational effectiveness scores. In order to prove this substantive hypothesis, H_3: $r_{me} > 0$, it is necessary to reject the null hypothesis, H_o: $r_{me} = 0$ which predicts the absence of relationship between management systems and organizational effectiveness.

The Pearson Product-moment Correlation (r) was calculated for management system dimensions and effectiveness dimensions to measure the strength, direction and statistical significance of relationship between the independent and the dependent variables with groups as the unit of analysis. Table 12, Pearson Correlation Coefficients for Management System and Effectiveness, clearly indicates the positive relationship between all measures. It is, therefore, appropriate to reject the null hypothesis, and to state, with more than 99 percent confidence ($p < .01$, with the exceptions of relationship between productivity and help with work), that a positive relationship was found between management

TABLE 12

Pearson Correlation Coefficients for Management System Dimensions And Effectiveness Dimensions

Management System Dimensions	Effectiveness Dimensions			
	Adaptability (1)	Productivity (2)	Satisfaction (3)	Effectiveness (1+2+3)
Managerial Leadership:				
Support	0.26	0.32	0.35	0.39
Team building	0.47	0.40	0.40	0.53
Goal emphasis	0.44	0.39	0.46	0.54
Help with work	0.34	0.16*	0.51	0.44
Involvement	0.53	0.35	0.39	0.53
Organizational Climate:				
Communication flow	0.59	0.44	0.59	0.69
Decision making practices	0.46	0.39	0.36	0.51
Concern for persons	0.48	0.42	0.57	0.62
Influence on department	0.32	0.24	0.32	0.38
Motivation	0.43	0.35	0.47	0.53
Technical adequacy	0.52	0.35	0.50	0.58

All $p < .01$.

*$p > .05$

systems and organizational effectiveness.

Further analysis of the relationship between management system and organizational effectiveness was done with the use of multiple regression analysis. This analysis determines the proportion of variance in organizational effectiveness scores explained by management system scores. Table 13 presents the results of this analysis, which indicates a positive relationship between measures of management system and effectiveness as reflected in the multiple regression ratios. The results show that 55 percent of the variation in adaptability, 38 percent of the variation in productivity, and 54 percent of the variation in satisfaction are explained by linear regression on the management system dimensions. The F-ratios indicate that these linear associations are statistically significant at $p < .01$.

TABLE 13

Multiple Regression Analysis for Evaluating the Dependence Of Measures of Effectiveness on Management System Dimensions (Managerial Leadership and Organizational Climate

Dependent variable (effectiveness)	Multiple Regression	Regression Square (R^2)	F-ratio
Adaptability (1)	0.74	0.55	9.68
Productivity (2)	0.61	0.38	4.78
Satisfaction (3)	0.73	0.54	9.35
Effectiveness (1+2+3)	0.80	0.65	14.65

All $p < .01$

Graphs and figures are some of the means by which a researcher attempts to clarify or stress a point in the presentation of research findings. The relationship between management system and effectiveness is the focus of this section. This relationship has been tested by Pearson Correlation Analysis for relationship and directionality, and by multiple regression for dependency. Graphic presentation of the relationship between these variables was thought to be the last step in this analysis.

Table 14 shows mean scores for management system and effectiveness for units or groups which are representing divisional units in the ten organizations surveyed. This table was made to permit graphic representation of the relationship between management systems and effectiveness for divisional units in the total sample. Figure 5 illustrates the spread of relationship between these two variables. Linearity of the relationship is apparent with some groups, such as groups in the Z organization, showing the highest and the lowest scores of effectiveness. There seems to be no apparent clustering of units of one organization in one section of the graph.

Table 15 shows consolidated mean scores for management system and effectiveness by organization. The purpose of this table is to permit a graphic construction of Figure 6 to show the relationship between these two variables for the ten organizations in the study. This graph as well as the

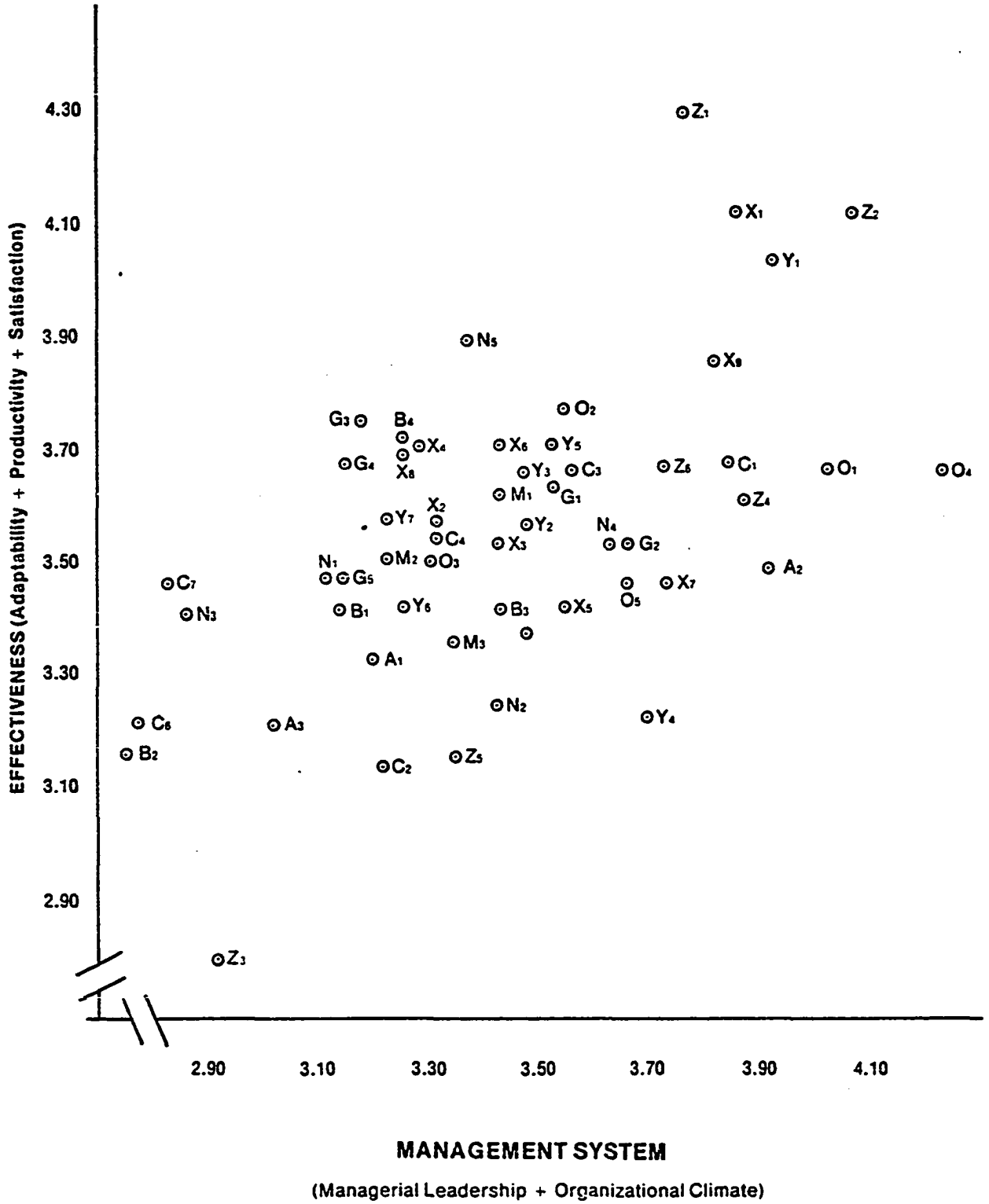
TABLE 14

Mean Scores for Management System and Effectiveness For Groups* in the Total Sample

Group	Mgmt. System	Effectiveness	Group	Mgmt. System	Effectiveness
X-1	3.85	4.14	N-3	2.85	3.41
X-2	3.31	3.56	N-4	3.65	3.55
X-3	3.46	3.54	N-5	3.38	3.90
X-4	3.29	3.71	C-1	3.85	3.69
X-5	3.56	3.43	C-2	3.21	3.15
X-6	3.43	3.71	C-3	3.56	3.67
X-7	3.74	3.49	C-4	3.31	3.55
X-8	3.26	3.70	C-5	3.49	3.39
X-9	3.81	3.87	C-6	2.74	3.22
A-1	3.20	3.33	C-7	2.80	3.47
A-2	3.91	3.50	Y-1	3.91	4.07
A-3	3.05	3.16	Y-2	3.49	3.57
M-1	3.44	3.64	Y-3	3.48	3.67
M-2	3.23	3.51	Y-4	3.70	3.23
M-3	3.53	3.37	Y-5	3.52	3.70
O-1	3.82	3.67	Y-6	3.26	3.44
O-2	3.55	3.78	Y-7	3.24	3.59
O-3	3.30	3.51	B-1	3.04	3.43
O-4	4.22	3.67	B-2	2.46	3.17
O-5	3.66	3.47	B-3	3.44	3.43
G-1	3.53	3.65	B-4	3.26	3.72
G-2	3.68	3.55	Z-1	3.76	4.30
G-3	3.29	3.75	Z-2	4.07	4.11
G-4	3.15	3.68	Z-3	2.92	2.51
G-5	3.14	3.49	Z-4	3.87	3.62
N-1	3.13	3.39	Z-5	3.37	3.17
N-2	3.42	3.25	Z-6	3.73	3.68

*Only groups which have three or more subjects are included in this table. X-1, X-2, ..., etc. represent the company and the division unit.

FIGURE. 5
MANAGEMENT SYSTEM MEAN SCORES AND EFFECTIVENESS (For Groups) RELATIONSHIP



correlation analysis, the multiple regression analysis, and the graph representing the divisional units, provide evidence to substantiate hypothesis III, which predicts a positive relationship between higher management systems scores and higher effectiveness scores.

TABLE 15

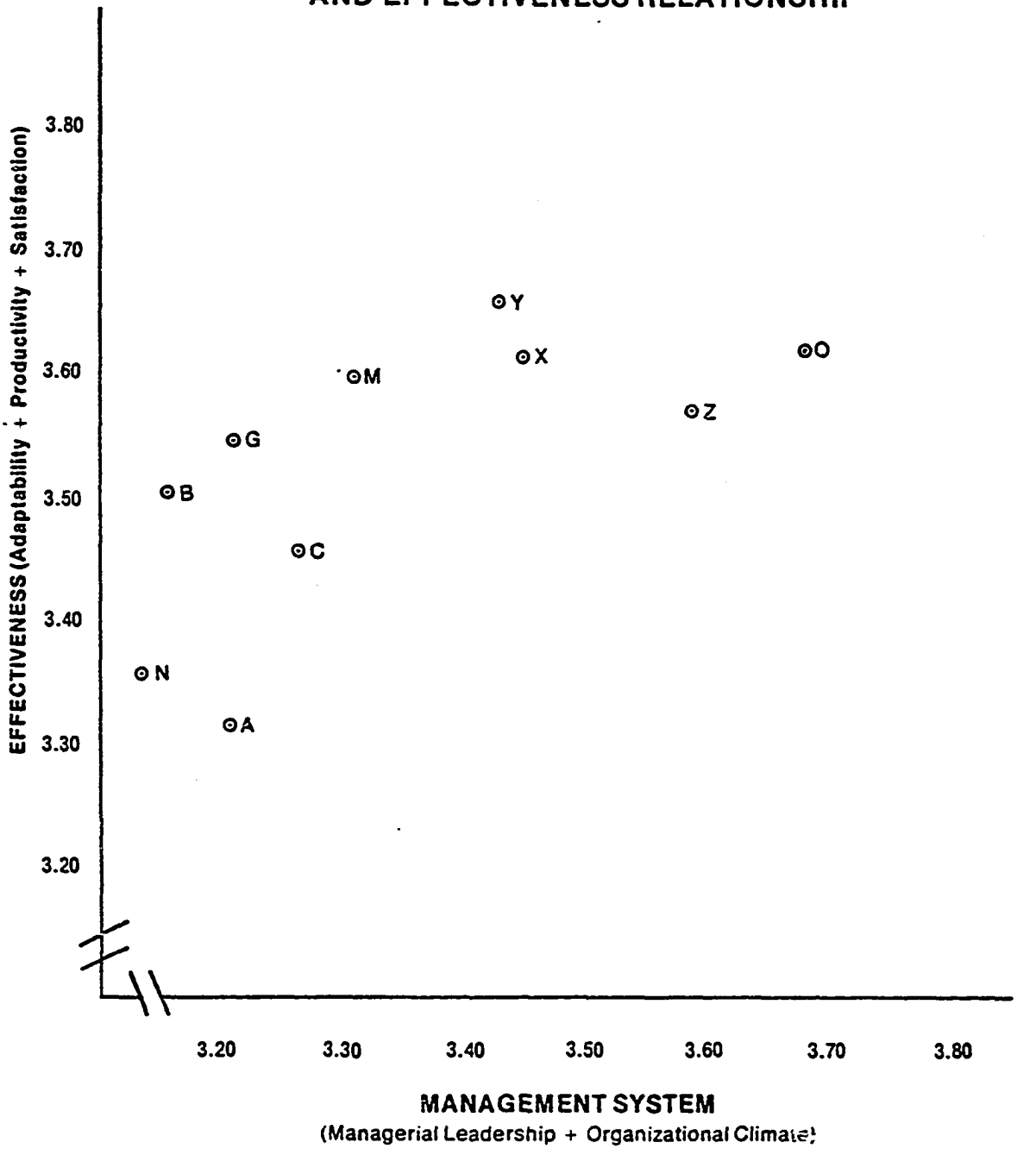
Consolidated Mean Scores for Management System And Effectiveness by Organization

Organization	Management System Leadership and Climate	Effectiveness Adaptability, Productivity, and Satisfaction
X	3.45	3.62
Y	3.43	3.66
Z	3.59	3.58
O	3.68	3.62
A	3.21	3.32
G	3.21	3.55
C	3.26	3.46
M	3.31	3.60
N	3.14	3.37
B	3.16	3.51

Relationship Between Management Systems And Internal State and Health

Internal state and health in the research model is measured by indices of peer leadership and group process.

FIGURE. 6
MANAGEMENT SYSTEM MEAN SCORES AND EFFECTIVENESS RELATIONSHIP



Likert contends that peer leadership contributes to the strength and effectiveness of system 4 management interaction-influence networks. Research findings show that group members adopt behavior similar to that practiced by their superiors and that measures used to describe managerial leadership can be used to describe peer leadership behavior. Group process, which includes planning and coordinating, decision making and problem solving, sharing information, meeting objectives, confidence and trust, and meeting unusual demands, is formed from the influences of managerial and peer leadership.[1] Peer leadership and group process are the intervening variables between the causal managerial leadership and organizational climate and the dependent variable organizational effectiveness.

Research question 4 explores the relationship between the management systems in the sample data and the internal state and health. Hypothesis IV predicts a positive relationship between higher scores on the management system dimensions and higher scores on measures of the internal state and health. In order to prove this substantive hypothesis H_4: $r_{mi} > 0$, the null hypothesis H_o: $r_{mi} = 0$ must be rejected.

The Pearson Product-moment Correlation (r) was

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[1]J. Likert and R. Likert, New Ways of Managing Conflict, pp. 101-102.

calculated for management systems indices and the internal state and health indices to measure the strength and direction of relationship between these indices. A presentation of this analysis can be seen in Table 16. The results of this analysis show the relationship to be positive for all indices. Therefore, the null hypothesis, H_o: $r_{mi} = 0$, is rejected, and with more than 99 percent confidence ($p < .01$) it is possible to say that a positive relationship was found between management systems scores and internal state and health scores.

Multiple regression analysis was performed on the data to evaluate the dependence of measures of the internal state and health on management system dimensions (managerial leadership and organizational climate). The results of this analysis are presented in Table 17. The multiple regression ratios confirm the positive relationship between measures of management system and measures of the internal state and health. The regression square ratios show that 46 percent of the variation in peer leadership and 52 percent of the variation in group process are explained by linear regression on the management system dimensions. The F-ratios indicate that these linear associations are statistically significant at $p < .01$.

Based on Table 18, a graphic representation of the relationship between management system mean scores and internal state and health mean scores is presented in Figure 7.

TABLE 16

Pearson Correlation Coefficients for Management System Indices And Internal State and Health Indices

Management System Indices	Internal State and Health Indices				
	Support	Team Building	Goal Emphasis	Help With Work	Group Process
Managerial Leadership:					
Support	0.50	0.38	0.37	0.37	0.55
Team building	0.40	0.46	0.38	0.36	0.52
Goal emphasis	0.40	0.45	0.39	0.44	0.53
Help with work	0.45	0.56	0.43	0.49	0.42
Involvement	0.23**	0.46	0.31	0.38	0.46
Organizational Climate:					
Communication flow	0.35	0.56	0.47	0.49	0.46
Decision making practices	0.18**	0.39	0.31	0.26	0.45
Concern for persons	0.18**	0.39	0.31	0.30	0.37
Influence on department	0.30	0.27	0 25	0.14*	0.38
Motivation	0.29	0.30	0.29	0.19**	0.39
Technical adequacy	0.20	0.42	0.26	0.35	0.46

All $p < .01$ with the exceptions of:

*$p > .05$ **$p < .05$

TABLE 17

Multiple Regression Analysis for Evaluating the Dependency Of Measures of Internal State and Health on Management Management System Dimensions (Managerial Leadership and Organizational Climate)

Internal State and Health Measures (Dependent)	Multiple Regression	Regression Square	F-ratio
Peer leadership	0.67	0.46	7.41
Group process	0.72	0.52	8.55

All $p < .01$

This figures shows a similar relationship to the one seen in Figure 5: production organizations X, Y, Z and O have higher scores than other organizations. Organization Z scores are the highest among the oil producing organizations on internal state and health dimension, while X is the lowest among this group. It seems that the older and better established organizations score higher on management systems, internal state and effectiveness. But above all, linearity between management system and internal state and health is clearly shown in Figure 7. It is appropriate to summarize the findings of this section as follows: in the majority of cases, the higher the scores on the management systems dimension, the higher the scores for internal state and health for the sample data in this study.

TABLE 18

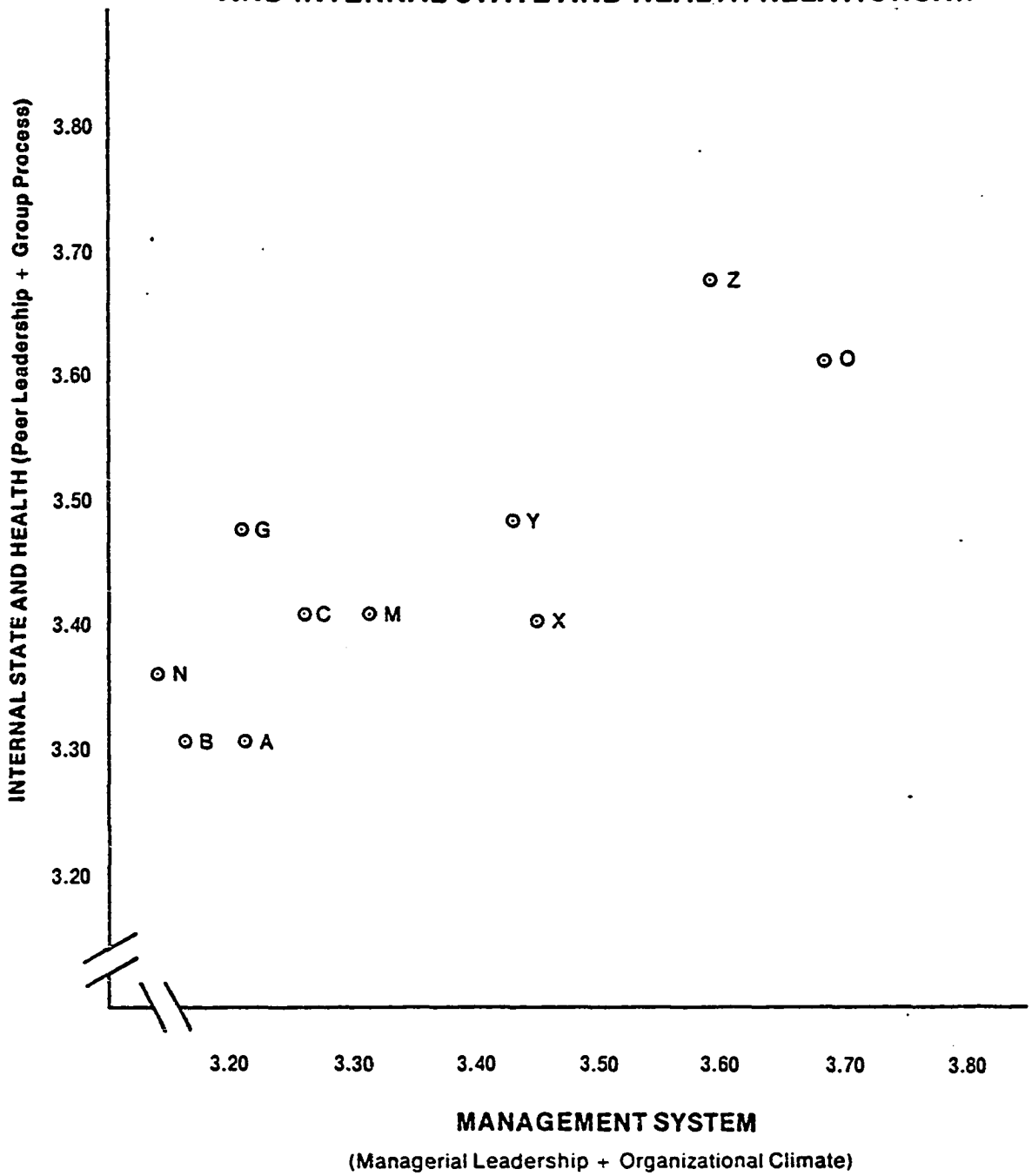
Consolidated Mean Scores for Management System And Internal State and Health

Organization	Management System	Internal State And Health
X	3.45	3.41
Y	3.43	3.49
Z	3.59	3.69
O	3.68	3.62
A	3.21	3.31
G	3.21	3.48
C	3.26	3.42
M	3.31	3.42
N	3.14	3.36
B	3.16	3.31

Relationship Between Internal State and Health and Effectiveness

Relationships between management systems and organizational effectiveness and between management systems and internal state and health have been explored in the previous sections. The last set of relationships which remain to be tested is between internal state and health and effectiveness. Research question 5 explores this relationship. Hypothesis V predicts a positive relationship between these two variables. In order to prove this substantive hypothesis,

FIGURE. 7
MANAGEMENT SYSTEM MEAN SCORES
AND INTERNAL STATE AND HEALTH RELATIONSHIP



H_5: $r_{ie} > 0$, the null hypothesis, H_o: $r_{ie} = 0$ must be rejected.

The same procedure which was used for hypothesis III and IV was followed in this case. The Pearson Product-moment Correlation (r) was calculated for internal state and health and effectiveness indices, to determine the strength and direction of the relationship. The results of this analysis are presented in Table 19. The correlation coefficients (r) are positive for all relationships in this table. The null hypothesis is rejected, because a positive relationship was found between measures of effectiveness and measures of internal state and health. These relationships are significant at $p < .01$. The highest relationship is found between measures of internal state and health and adaptability, satisfaction, and productivity in that order. However, group process seems to have the highest correlation with all measures of effectiveness.

Multiple regression analysis was employed to determine the proportion of variance in organizational effectiveness measures explained by internal state and health. The results of this analysis are presented in Table 20. The multiple regression values in this table indicate the positive nature of relationship between these two dimensions. The regression square values indicate that 39 percent of the variance in adaptability, 21 percent of the variance in productivity, and 28 percent of the variance in satisfaction

TABLE 19

Pearson Correlation Coefficients for Internal State And Health Indices and Effectiveness Indices

Internal State And Health Indices	Effectiveness Indices: Adaptability (1)	Productivity (2)	Satisfaction (3)	Effectiveness (1+2+3)
Peer Leadership				
Support	0.33	0.18*	0.45	0.41
Team building	0.57	0.33	0.47	0.58
Goal emphasis	0.57	0.43	0.41	0.59
Help with work	0.55	0.33	0.40	0.54
Group Process	0.58	0.48	0.49	0.65

All $p < .01$ with the exception of $*p < .05$

TABLE 20

Multiple Regression Analysis for Evaluating the Dependence of Measures of Effectiveness on Internal State and Health (Peer Leadership and Group Process)

Depdendent Variable (Effectiveness)	Multiple Regression	Regression Square	F-ratio
Adaptability	0.66	0.39	14.52
Productivity	0.56	0.21	8.30
Satisfaction	0.56	0.28	8.25

All $p < .01$

are explained by linear regression on the internal state and health dimension. The F-ratios indicate, with more than 95 percent confidence, that these linear associations are statistically significant.

Table 21 presents consolidated mean scores for measures of effectiveness and measures of internal state and health. The purpose of this table is to permit a graphic construction of the relationship between these two dimensions. Figure 8 shows the relationship between effectiveness and internal state and health. Linear association between high scores on internal state and health dimension and effectiveness is clearly indicated by this figure. This graph, as well as the correlation analysis and the multiple regression analysis, provide good evidence to substantiate hypothesis V, which predicts a positive relationship between higher internal state and health scores and higher scores on effectiveness.

SUMMARY

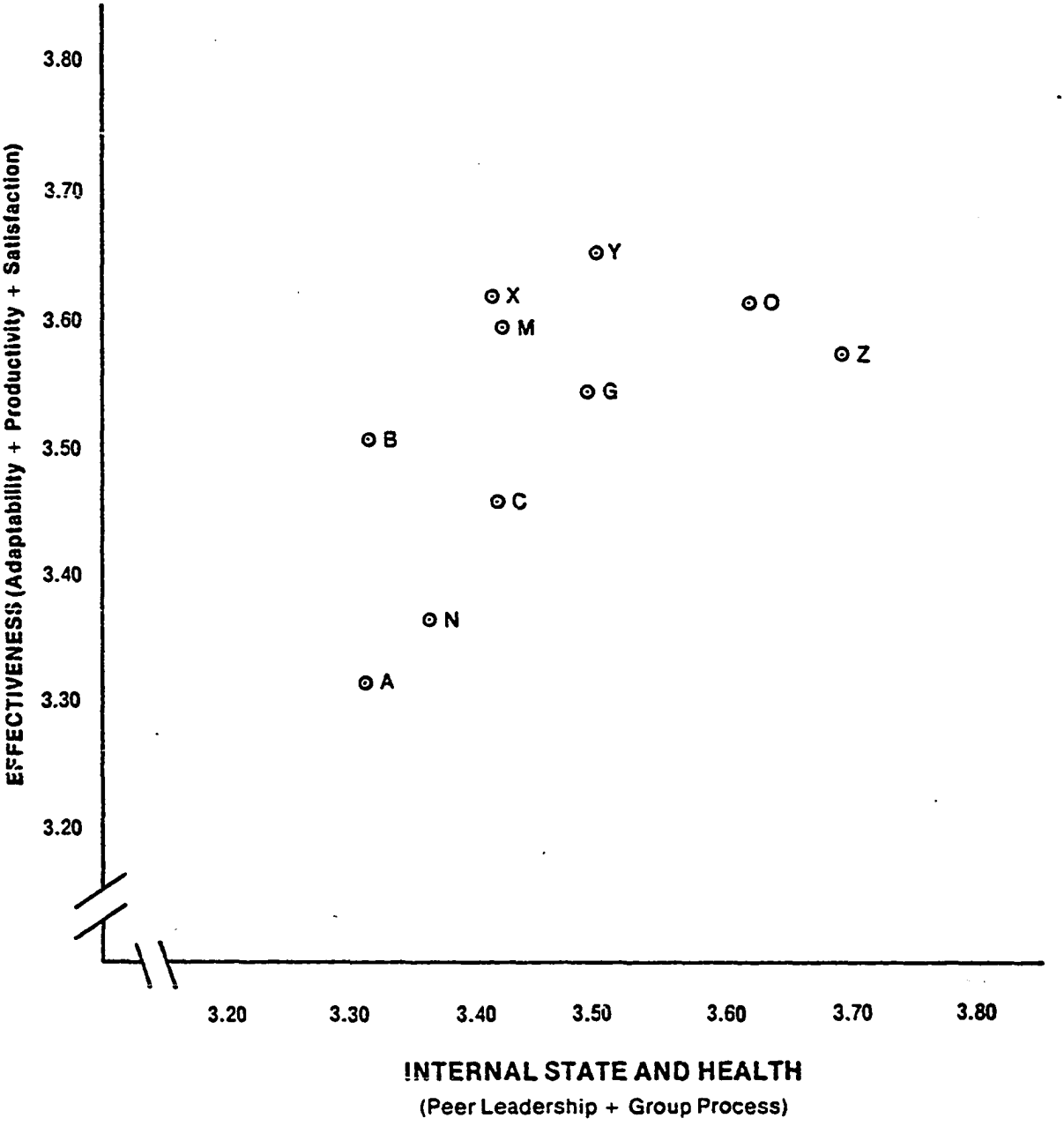
This chapter has provided a systematic presentation of the research findings and analysis. The results of the mean scores analysis to determine the management systems most predominant in multinational organizations operating in the Arabian Gulf region, a major objective of this study, were presented. Further analysis of the mean scores, to determine whether a significant statistical difference

TABLE 21

Consolidated Mean Scores for Internal State and Health (Peer Leadership and Group Process), and Effectiveness (Adaptability and Productivity and Satisfaction

Organization	Internal State And Health	Effectiveness
X	3.41	3.62
Y	3.49	3.66
Z	3.69	3.58
O	3.62	3.62
A	3.31	3.32
G	3.48	3.55
C	3.42	3.46
M	3.42	3.60
N	3.36	3.37
B	3.31	3.51

FIGURE. 8
INTERNAL STATE AND HEALTH MEAN SCORES AND EFFECTIVENESS RELATIONSHIP



exists between the management systems in the sample data, was presented in the results of the analysis of variance for the ten organizations. A comparison was made between the mean scores on the management system dimensions and the national norms in the United States for about the same managerial levels. Analysis of variance findings on regional differentiation and its influence on the perception of the management system and other dimensions in the research model were also presented.

The results of the student's t-statistical analysis to determine whether a significant statistical difference can be found between perceived and desired managerial and peer leadership were presented. However, in order to determine the relationship and dependency between management systems and organizational effectiveness, management systems and internal state and health, internal state and health and organizational effectiveness, the results of Pearson Correlation Analysis, multiple regression analysis as well as graphic representation of these relationships were presented. A summary of these research findings will be introduced in Chapter V, with implications of these findings and suggestions for future research in this area.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS FOR FUTURE STUDIES

The purpose of this final chapter is to present a summary of the research findings, to compare these findings with the findings of Likert and his associates at the University of Michigan, and to draw conclusions based on these findings. A discussion of the implications of these findings as well as suggestions for future studies will be presented.

Introduction

The point was made earlier in Chapter I and Chapter II that increasing interdependency and cross-cultural exchanges, the recognition of the important role that management plays in economic development, and the increasing competition among nations to produce and market their product at low costs are all leading to a convergence in managerial practices and techniques. The convergence seems to be toward more participative management systems rather than toward autocratic systems. Most of the studies in organizational behavior literature indicate that, in the long-run, the most effective management system is the participative developmental approach. This

system, as articulated and advocated by Likert, seems to be the most promising approach in the quest for general principles in organization and management theory and a way out of the fragmentation and disarray which is characteristic of the field.

Summary of the Research Findings

The purpose of this study is, first, to identify the management systems in multinational organizations operating in the Arabian Gulf region, where people from several parts of the world work together to produce a product or to render a service; and, second, to study the relationships between management systems and organizational effectiveness in these organizations.

Likert's model to study the human organization was used with some modifications to incorporate his earlier designation of the management systems and to introduce organizational effectiveness as a dependent variable in the research model. Elements characterized by Likert as causal variables (managerial leadership and organizational climate) were grouped into one category, "Management System," as the independent variable. Elements which were called intervening variables were used in the research model as intervening variables with the exception of satisfaction, which was placed in the dependent variable category because literature review shows that satisfaction is mostly treated as a dependent

variable. Organizational effectiveness, the dependent variable, is derived from basic studies on the subject and includes measures of adaptability, productivity, and satisfaction.

The Management System

Statistical analysis in Chapter IV shows that the most predominant management system in top management levels of the multinational organizations in the study in the Arabian Gulf region is the "consultative" system 3 rather than the "exploitive authoritative" system 1 or the "benevolent authoritative" system 2, as was predicted by hypothesis I. However, the sample mean scores on indices of the management system were found to be below the national norms in the United States for the same managerial levels. Although system 3 was found to be the dominant type, statistically significant differences ($p < .05$) were found between management systems in these organizations. The older, better established organizations, which are mostly involved in production of crude oil, score the highest on the management system dimensions.

Regional Differentiation and Perception Of Management System

The question of whether regional orientation (part of the world in which the participants live up to 25 years of age) has anything to do with perception of the management

system was statistically tested. The results of the analysis show, with more than 95 percent confidence ($p < .05$), that regional differentiation has no statistically significant influence on perception of the management system or any other dimension in the research model.

Perceived and Desired Managerial and Peer Leadership

The student's t-statistic shows a significant difference ($p < .05$) between desired and perceived managerial and peer leadership. The desired managerial practices are toward more participative group systems. Participants perceived the managerial and peer leadership practices to be the "consultative" system 3, however, the system desired on these two dimensions is system 4. This finding supports other research findings which show the desire of employees to have a more participative management system which is built around support, team work emphasis, high performance goals and work facilitation.

Management Systems and Organizational Effectiveness

The relationship between management systems and organizational effectiveness was tested statistically for directionality and magnitude as well as for dependency. Pearson Correlation Coefficients for management system and organizational effectiveness indices were found to be positive and statistically significant with $p < .01$. The multiple regression analysis shows that 55 percent of the variation in

adaptability, 38 percent of the variation in productivity, 54 percent of the variation in satisfaction and 65 percent of the variation in overall effectiveness are explained by linear regression on the management system dimensions, and that these linear relationships were found to be statistically significant with $p < .01$. Statistical analysis as well as graphic representation of the relationship between management systems and organizational effectiveness were found to substantiate hypothesis III which predicted a positive relationship between higher management systems and higher scores on organizational effectiveness.

Management Systems and Internal State and Health

Further analysis of the relationship between management systems and internal state and health (the intervening variable) substantiated hypothesis IV which predicted a positive relationship between high scores on the management system dimensions and higher scores on measures of the internal state and health. Pearson Correlation Coefficients were found to be positive for all indices. Furthermore, multiple regression analysis shows that 46 percent of the variation in peer leadership and 52 percent of the variation in group process is explained by linear regression on the management system dimensions and that these linear associations are statistically significant with $p < .01$.

Internal State and Health and Effectiveness

The same statistical and graphic procedures which were used to substantiate hypotheses III and IV were used to assess the accuracy of the prediction made in hypothesis V. This hypothesis predicted a positive relationship between indices measuring organizational effectiveness and indices measuring the internal state and health. Pearson Correlation Coefficients were found to be positive for all indices and were significant with $p < .01$. The highest relationships were found between measures of the internal state and health and adaptability. Group process shows the highest correlations with all measures of effectiveness. Multiple regression analysis shows that 39 percent of the variation in adaptability, 21 percent of the variance in productivity, 28 percent of the variance in satisfaction, and 48 percent of the variation in overall effectiveness are explained by linear regression on the internal state and health dimensions, and that these linear associations are significant with $p < .01$.

The Research Model

So far the presentation has dealt with the summary of the research findings. This section presents the research model in more detail in order to make it possible to compare the research findings reported by Likert with those generated by the data in this study. Figure 9 presents the

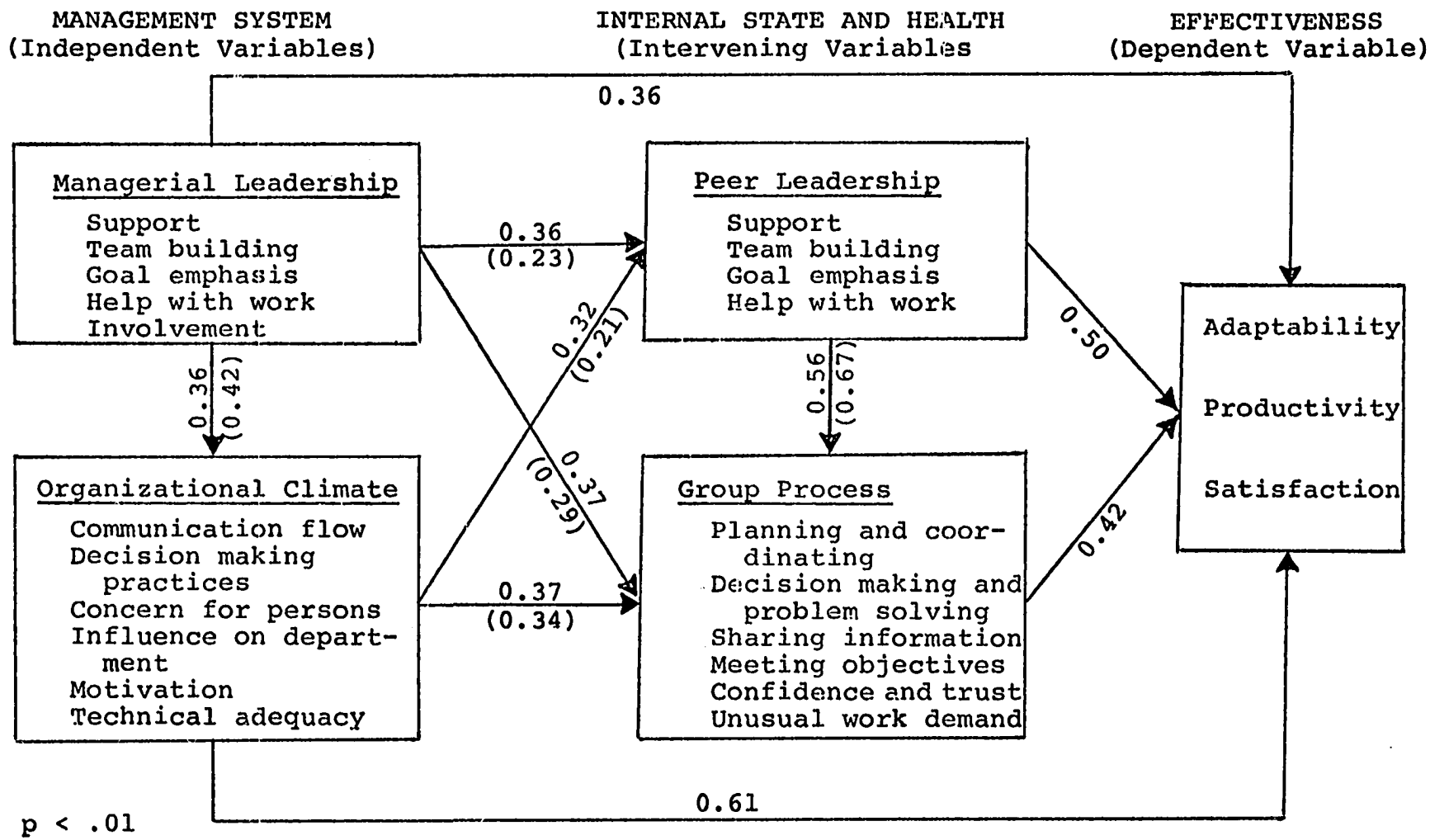


FIGURE 9

Relationship Among Human Organizational Dimensions and Organizational Effectiveness as Defined in the Research Model

research model with multiple regression square (R^2) values which indicate the relationships and the dependency between the independent, the intervening and the dependent variables. The values of R^2 between parentheses are those reported by Likert (see Figure 2), the other values are those generated by the sample data in this study.

Inspection of Figure 9 shows that with the exception of the relationships between managerial leadership and organizational climate, peer leadership and group process, the regression squares (R^2) were found to be higher between elements of the human organizational dimensions in this study than those reported by Likert. The highest R^2 reported by Likert is between peer leadership and group process; the highest R^2 found in this study is between the same two dimensions.

Other multiple regression square (R^2) values, which show the dependency relationship between organizational effectiveness as the dependent variable and other variables, are shown in Figure 9. These values indicate that 36 and 61 percent of the variation in organizational effectiveness are explained by linear regression on managerial leadership and organizational climate, respectively. The values between internal state and health and effectiveness indicate that 50 and 42 percent of the variation in organization effectiveness are explained by linear regression on peer leadership and group process, respectively. All these linear associations are significant with $p < .01$.

Conclusions

The preceding summary of the research findings suggests that it is possible to draw the following conclusions about the findings of this study:

First, the management system found to be the most predominant in top management levels of the organizations in the study in the Arabian Gulf region is the "consultative" system 3. However, differences between management systems in these organizations were found to be statistically significant. The older and the better established organizations were found to have the highest scores on the management system dimensions as well as on other dimensions in the research model.

Second, regional differentiation has insignificant influence on perception of the management system or on any other variable in the research model.

Third, the desired management system, at least on the managerial and peer leadership dimension, is toward system 4 rather than toward the perceived system 3.

Fourth, the perception of a more participative group management system (high scores on the human organizational dimension) is, in the majority of cases, associated with the perception of higher organizational effectiveness, measured by high scores on adaptability, productivity and satisfaction.

Fifth, the perception of a more participative group

management system (high scores on the human organizational dimension) is, in the majority of cases, associated with the perception of higher internal state and health, measured by high scores on peer leadership and group process.

Sixth, the perception of a more participative group internal state and health (high scores on the human organizational dimension) is, in the majority of cases, associated with the perception of higher organizational effectiveness, measured by high scores on adaptability, productivity and satisfaction.

Implications of Research Findings

The implications of the findings of this study could be treated on two levels, an empirical result-oriented level where the focus is on empirical findings, and a philosophic argumentative level which looks beyond empirical findings. On the empirical level, the research findings can be taken as a testimony to the convergence in managerial practices and techniques, the desire of people for more participative management systems which employ the principle of supportive relationship, group method of supervision and decision making, and high performance goals. Furthermore, this study shows that it is possible to use the human organization dimensions in a multinational setting and obtain empirical results similar to those found in the United States. The implication of such findings may be that people are people

and their basic human needs are not after all that much different. The humanist assumptions about people are applicable across boundaries and in multinational organizations.

Further on the empirical level, it was possible in this study to use perceptual measures of organizational effectiveness in conjunction with Likert's measures of the human organization and to find comparable results to those found by Likert and the Michigan group.[1] Likert reported that organizations scoring high on the human organization dimensions are found to be the high producing organizations. In this study the high scores on the human organization dimensions are associated with high scores on measures of organizational effectiveness. For example, Likert reported that 46 percent of the variation in total productive efficiency is explained by linear association in organizational climate, while in this study the figure is 61 percent. These findings point to the usefulness of using perceptual measures to determine effectiveness.

On the philosophical level, the implication of the research findings is the universal desire of people of all races and colors to participate in decisions affecting their lives. It is the researcher's conviction that an organization's stability and success, a nation's stability and

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[1]Likert's model in Chapter II, Figure 2, shows the dependent variable to be Total Productive Efficiency which was measured by productivity, costs, scrap loss, earnings, and market performance.

progress, and global harmony and the avoidance of conflicts rest on a principle of power equalization and power sharing among those concerned. Centralization of power in the hands of the few ultimately leads to resentment and hatred, and hence to the disintegration of human aggregations. The history of mankind is full of pages that show injustice to be at the heart of conflict between people and among nations. The same is true for any human aggregation. It is only through fair and just systems that are based on power equalization that a resolution of human conflicts can be achieved.

Recommendations for Future Studies

This study focuses attention on a new phenomenon which is on the rise, that is, the multinational organizations where people from different cultural backgrounds work together to produce a product or to render a service. Further study of this type of organization would undoubtedly enhance our understanding of working relationships and strengthen the prospect for advancing general principles in management and organization theory. This study was limited to upper level management in these organizations. A comparable study which might be undertaken is to study the middle and supervisory level management and see whether similar relationships can be achieved. In this study the environment as well as the type of industry were taken to be fixed. Another study which could be undertaken would be one with a variety of

organizations involved in several industries and in different environmental settings to see if the relationships achieved in this study could be obtained. This study points to a potential problem area: peer relationships of minorities within organizations. The category "others" which represents people from Australia, Africa, etc., shows the lowest scores on all the human organizational dimensions and the lowest score on peer leadership. An investigation of such problems might be worthwhile. One study which might be pursued is to combine the human organizational dimensions in a model with objective performance data and test it in a multinational setting.

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APPENDIX A

MANAGEMENT SYSTEMS SURVEY INSTRUMENT

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APPENDIX B

Items and Indices in the Research Instrument Corresponding to the Research Model

Managerial Leadership Dimension

Support:	Perceived:	Items 27, 29, and 31
	Desired:	Items 28, 30, and 31
Team Building:	Perceived:	Items 43 and 45
	Desired:	Items 44 and 46
Goal Emphasis:	Perceived:	Itmes 33 and 35
	Desired:	Items 34 and 36
Help With Work:	Perceived:	Items 37, 39, and 41
	Desired:	Items 38, 40, and 42
Involvement:		Items 51, 52, and 53

Organizational Climate Dimension

Communication Flow:	Items 5, 6, and 7
Decision Making Practices:	Items 23, 24, 25, and 26
Concern For Persons:	Items 2, 3, and 4
Influence On Department:	Items 19, 20, 21, and 22
Motivation:	Items 15, 16, 17, and 18
Technical Adequacy:	Items 1 and 83

Peer Leadership Dimension

Support:	Perceived:	Items 54, 56, and 58
	Desired:	Items 55, 57, and 59
Team Building:	Perceived:	Items 70, 72, and 74
	Desired:	Items 71, 73, and 75
Goal Emphasis:	Perceived:	Items 60 and 62
	Desired:	Items 61 and 63
Help With Work:	Perceived:	Items 64, 66, and 68
	Desired:	Items 65, 67, and 69

Group Process Dimension

Items: 76, 77, 78, 79, 80, 81, and 82

Effectiveness Dimension

Adaptability:	Items 87, 88, 89, 90, and 91
Productivity:	Items 92, 93, and 94
Satisfaction:	Items 8, 9, 10, 11, 12, 13, and 14