Organizational effectiveness of universities in Malaysia

Muhammad 'Imaduddin 'Abdulrahim

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ORGANIZATIONAL EFFECTIVENESS OF UNIVERSITIES IN MALAYSIA

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Organizational effectiveness of universities in Malaysia

by

Muhammad 'Imaduddin 'Abdulrahim

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1. INTRODUCTION

It is an accepted idea that a nation cannot achieve adequate development in this modern world without having a science and technology base. For developing nations, science and technology plays a very important role, not only in socio-economic development, but in their efforts to survive in an ever increasingly competitive global market. On the other hand, continuous economic growth is placing increased demands upon science and technology. Therefore, the future survival of a developing nation depends heavily on its ability to use science and technology effectively in order to make the best use of its natural resources. Optimal utilization of natural resources by developing nations cannot be achieved without increasing the breadth and depth of the capability of its human resources. This means having the internal capability to perform necessary technical and social functions without the need to depend on outside expertise. The most pressing problem confronting developing

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1 The Iowa State University Committee on the Use of Human Subjects in Research reviewed this project and concluded that the rights and welfare of the human subjects were adequately protected, that risks were outweighed by the potential benefits and expected value of the knowledge sought, that confidentiality of data was assured and that informed consent was obtained by appropriate procedures.
countries today is the acute shortage of qualified human resources. That is, a work force capable of handling the ever increasing demands placed upon it by socio-economic growth, which in turn tends to be a prerequisite and indispensable need for a nation's survival. Therefore, developing nations face the question of effective human resource development as a matter of "to be or not to be".

Indonesia, as one of these developing nations, has tried its best to meet this pressing need as described by the Deputy Chairman for Natural Sciences of The Indonesian Institute of Sciences (LIPI), Sastrapradja (1983):

"Much effort has been made by the Indonesian government to overcome this manpower problem. During the past several years national education at all levels has been vastly expanded quantitatively. State universities have been established in all but one province, and the number of university graduates has soared in the past several years. Nonetheless, all these efforts are far from adequate to meet the growing need for qualified manpower.

Thus it becomes increasingly clear that the development of human resources must receive top priority. This is particularly true in the case of scientific and technological manpower" (p. 75).

Habibie, Minister of State for Research and Technology of Indonesia, 1982 reported that by 1990 Indonesia will need approximately 70,000 engineers, 21,000 scientists, 26,000 agriculturists, 11,000 accountants, 16,000 economists, and 337,000 administrators and managers. In the energy sector alone, more than 5,000 engineers, scientists, and technicians will be needed by 1985 (B. J. Habibie as quoted
This tremendous demand for trained manpower is expected to be fulfilled by the above referenced universities which have all been established within the last 25 years. However, it is still realized that these universities are hampered by many shortcomings and many have difficulties meeting the demands of a growing society. It is stated by the Director General of Higher Education of the Ministry of Education and Culture, Tisna Amidjaja (1983):

"Institutions of higher learning face many problems, a number of which stem from the central problem of low efficiency. Internal inefficiency diminishes higher education's ability to contribute effectively to national development. Below are some of the features of low internal efficiency:

* **Low Productivity.** This is manifested by high drop out and high repeater rates. Repeaters prolong normal study time, inflate the total number of students, and, in a vicious circle, contribute to a diminution of institutional efficiency.

* **Low absorption capacity in meeting the expanding needs created by the development of the expanded secondary education system.** This amplifies problems of student selection at the tertiary level.

* **Inadequate budgets.** These adversely affect all aspects of the teaching-learning process.

* **Unequal distribution of institutions among the different regions.** There is too high a concentration of institutions of higher education in Java.

* **Levels and types of fields of study are not structured to meet the real needs of Indonesia.** Too much emphasis has been placed on the "first degree" level of training and "academic" education which fails to relate theory into practice. Too little attention has been given to other levels and more practical types of post-secondary education."
* Rapid expansion of the system has made it difficult to recruit highly qualified and dedicated staff. This is exacerbated by the limited resources available to pay satisfactory salaries and maintain a high level of personal professional development to serve the national interest" (pp. 84-85). (underlines are original).

While recognizing the above situation the third world\(^1\) nations strongly believe that education, and a highly effective educational system is the only answer to their problem. Education is believed to be an investment with a very high pay-off for economic growth and development. The Panel Discussions on Science and Technology Planning and

\(^1\) "Third World" was first used by Alfred Saufy in 1955. It has been popularly accepted, although a satisfactory definition has not yet been provided. Bedjaoui (1979) has suggested:

"It (Third World) can be defined according to many different criteria, e.g., political (a group of States attached neither to the capitalist camp nor to the Communist block), economic (countries with the common characteristic of underdevelopment), or a combination of the two (geographical areas still exploited in various ways by capitalist imperialism).... Geographically speaking, it mainly consists of the African, Asian and Latin American States, i.e., the countries belonging to the 'storm belt', as they may be described by reference to the disturbances they have been through and the battles they have fought for their national liberation and economic independence. The Third World is thus a geopolitical concept based both on inclusion in a geographical area - the Southern hemisphere - at the historical period of colonization, and on the economic situation of underdevelopment" (pp. 25-26).
Forecasting for Indonesia: Special Emphasis on Manpower Development, which was held in Jakarta, Indonesia, on November 8-10, 1982, reported in its Summary of Plenary Sessions:

"Education is an investment with a very high payoff for economic growth and development. The 25.5 percent rate of return to expanding primary education and 15-20 percent rates of return at the secondary level estimated for Indonesia confirm this fact. Rates of return to scientific and technical manpower at the college level have not been studied because of insufficient data. Collection of data, therefore, on earnings in private industry at each level of schooling and in each field should be part of the manpower planning effort.

The manpower plan developed for Indonesia by a World Bank team in 1979 indicates a need for trained manpower far beyond that currently being produced: an additional 3,900 engineers per year, 1,200 scientists, 700 agricultural scientists, 700 accountants, 900 economists, and 500 trained managers. The total of these needs is very close to the 8,585 per year shortfall of scientific and technically trained personnel projected by the Indonesian Institute of Sciences" (NAS, 1983, p. 40).

Organizational effectiveness of educational institutions must be considered as one of the important keys in overcoming the above problems. Many developing nations are rich in natural resources, but due to a shortage of well trained manpower they cannot develop themselves at a pace consistent with more advanced nations. Their educational systems are poorly planned, and badly managed, resulting in the inability to cope with a demand for trained manpower. Shortcomings in qualified teachers and staff members have
added to this predicament, suggesting that a serious study aimed at finding a remedy to these is indispensable.

One of the most important requirements for improving the management of an educational system is a methodology for measurement of its managerial or organizational effectiveness. This study is actually inspired by the need to evaluate a methodology for measuring organizational effectiveness of higher education management systems by testing the applicability in the Third World countries of Cameron's instrument for assessing organizational effectiveness of universities in New England. The results obtained from the five participating universities in Malaysia will be used to compare the organizational effectiveness of one university to the others. The author hopes that this study will provide a significant contribution toward the noble effort aimed at upgrading the quality of the management within the educational system in Indonesia as well as assist other developing nations facing a similar problem. The author strongly believes that an effective education management system is the first and most important solution to the multicomplex problems facing his home country.
In the past few years, profit oriented business organizations have had an increasing interest in productivity and organizational effectiveness. This has been influenced by:

- increased foreign competition,
- fewer natural resources,
- increased cost due to inflation and the need for pollution-free operations,
- highly automated data and information processing,
- scarcity of well trained managers and skilled workers.

This interest is not isolated, but seems to be worldwide, and discussed extensively by economists, business leaders, and politicians as well as academicians.

Productivity is usually defined as a measure of how much of a certain product can be produced from a given input of resources, of people, equipment, and money. This definition does not specify whether the things being produced are really what the organization wants. Productivity is simply a measure of material and mechanical efficiency of the organizational system.

Effectiveness is supposed to be the most important measure of a successful manager. The American Heritage
Dictionary of the English Language (1975) gives one of the meanings of the word "effect" as: "The power or capacity to achieve the desired result." Effectiveness can refer to the successful accomplishment of an intended result. Therefore, an effective organization should be successful in accomplishing results and must be managed by a successful manager. But, there seems to be very little agreement among organization and management scientists on what the term "effectiveness" really means, what to do to achieve it, and how it should be measured. Regretfully, not many solutions have been proposed and tested.

Campbell (1977) stated that there have been only two really rigorous empirical attempts to examine the structure of criteria of measuring effectiveness of organizations. The first was done by Seashore and Yuchtman (1967) at the University of Michigan Institute for Social Research. The second was done by Mahoney and Weitzel (1969) at the University of Minnesota Industrial Relation Center in their study of 283 departments sampled from over a dozen different firms (p. 41-42).

2.1. Problem of Definition

Effectiveness often means different things to different people, and is probably dependent upon one's frame of reference. To a capital expenditure expert or financial
analyst, effectiveness means return on investment or the ratio of net income to capital investment. To a production manager, it means the quality and quantity of production in terms of goods or services. Social scientists often view effectiveness in terms of the quality of work life and the morale of its human resources. To an academician or a research scientist, effectiveness may be defined in terms of the number of books or papers published or inventions and new ideas discovered.

A. Etzioni (1964) said:

"Organizations are constructed to be the most effective and efficient social units. The actual effectiveness of a specific organization is determined by the degree to which it realizes its goals. The efficiency of an organization is measured by the amount of resources used to produce a unit of output. Output is usually closely related to, but not identical with, the organizational goals. For instance, Ford produces automobiles (its output), but its goal seems to be profit-making. The unit of output is a measurable quantity of whatever the organization may be producing, expressed in terms of automobiles, well patients, or what not. Efficiency increases as the costs (resources used) decrease. Both current costs and changes in capital have to be taken into account.

It is important to note that while efficiency and effectiveness tend to go hand in hand, they not always do. An efficient company might make no profits, perhaps because of a declining market, and an inefficient one may return a high profit, because of a rising market. Moreover over-concern with efficiency may limit the scope of activities of an organization, while effectiveness might require a large variety of activities" (pp. 8-9).

In his earlier book, Etzioni (1961) differentiated between organizations, suggesting there were two types of
functional models:

"One is a survival (or feasibility) model; the other, an effectiveness model. Briefly, the two models differ as follows: A survival model specifies a set of requirements which, if fulfilled, allow a system to 'exist.' All conditions specified are necessary prerequisites for the functioning of the system; remove one of them, and the system will disintegrate. The effectiveness model defines a pattern of interrelations among the elements of the system which make it most effective in the service of a given goal (cf. Barnard, 1938, pp. 43, 55).

The difference between the two models is considerable. Sets of functional alternatives which are equally satisfactory from the viewpoint of the first model have a different value from the viewpoint of the second. The survival model gives a yes or no answer to the question: Is a specific relationship functional? The effectiveness model tells us that although several functional alternatives satisfy a requirement (or a "need") some are more effective in doing so than the others. There are first, second, third, and n-th choices. Only rarely are two patterns full alternatives in this sense; only rarely do they have the same effectiveness value" (p. 78).

Argyris (1964) treated efficiency and effectiveness as the same except that the latter has a time factor. Therefore, to him organizational effectiveness represents a condition in which the organization, over time, increases outputs with constant or decreasing inputs or has constant outputs with decreasing inputs. (p. 123)

Katz and Kahn (1966) defined effectiveness in terms of two components: efficiency and political effectiveness. "Political effectiveness consists in the short run of maximizing the return to the organization by means of advantageous transactions with various outside agencies and groups and with members of the organization as well" (p.
11

165), while the term "efficiency tells us how much of an input emerges as a product and how much is absorbed by the system" (p. 170).

Peter Drucker (1974) distinguished between efficiency and effectiveness by saying:

"Effectiveness is the foundation of success - efficiency is a minimum condition for survival after success has been achieved. Efficiency is concerned with doing things right. Effectiveness is doing the right things" (p. 45).

Different from Drucker, Hannan and Freeman (1977) distinguished them in terms of goal attainment and costs incurred. They stated:

"Within the tradition that emphasizes goal attainment, effectiveness is distinguished from efficiency. There is a wide spread agreement that the former refers to goal attainment and the latter refers to the costs incurred in goal attainment (usually unit cost per output). That is, effectiveness considerations are not made conditional on resources committed and used, whereas efficiency introduces comparisons." (p. 110)

Out of seven books written on the subject of organizational effectiveness in the past twenty years, each begins by pointing out the conceptual disarray and methodological ambiguity concerning this subject. Price (1968) wrote the first book on organizational effectiveness in which he asserted in his introduction:

"The purpose of this book is to present the core of what the behavioral sciences now know about the effectiveness of organizations: what we really know, what we nearly know, what we think we know, and what we claim to know" (p. 1).
Price's statement seems to be convincing. He also suggested five variables, which are positively related to effectiveness. They are productivity, morale, conformity, adaptiveness, and institutionalization. Productivity is accepted as more closely related to effectiveness than the other four variables (p. 5). This is in line with his definition of effectiveness, which is quoted below. It is based on a goal model. Price also suggested that the most urgent need in the study of effectiveness is the inventorization of the variables pertinent to the organizational effectiveness. This inventory should be expanded to include all kinds of organizations and in all corners of the world, particularly the non-American and non-Western organization. He believes that "It is impossible to develope a 'theory of the effectiveness of organization' with studies performed almost exclusively in the United States." (pp. 205-206). In defining organizational effectiveness, he referred to Etzioni by saying:

"Effectiveness, the dependent variable (of organization), may be defined as the degree of goal-achievement" (pp. 2-3).

Concerning Price's statement quoted above, Cameron (1983c) argued:

"Price's assertion was somewhat exaggerated because many of the propositions that he claimed were known about effectiveness were not known then, and still are not known in the behavioral sciences. The causal associations between certain predictor variables and effectiveness that were claimed to exist simply never have been empirically
demonstrated" (p. 3).

Goodman and Pennings (1977) observed, that in spite of growing interest in organizational effectiveness, the study undertaken on this topic is still in the preliminary state. They said:

"There are no definitive theories, there is no agreement on a definition for organizational effectiveness; the number of definitions varies with the number of authors who have been preoccupied with the concept" (pp. 2-3).

Goodman and Penning suggested a theoretical approach to organizational effectiveness. As open systems, organizations comprised of different subunits with two different missions, i.e., external mission such as sales, personnel, etc., and internal missions such as production planning, training and development etc. Therefore, organizational effectiveness must be associated with the contributions of these subunits. They suggested:

"Organizational effectiveness is likely to be a function of the degree to which the subunits meet their task requirements as well as the extent to which their activities are coordinated" (p. 149).

In fact, different conceptualizations of the meaning of an organization have resulted in a variety of approaches to the definition of organizational effectiveness. Perrow (1970) viewed an organization as a rational entity in pursuit of goals. While Cummings (1977) and Keeley (1978) saw an organization as an individual need-meeting cooperative, Pondy and Mitroff (1978) and Weick (1978)
viewed an organization as a meaning-producing system, while Galbraith (1975) as an information-processing system. Pfeffer and Salancik (1978) defined an organization as a coalition reacting or proacting to strategic constituencies. While agreeing with Goodman and Pennings, Campbell (1977) argued that a particular conceptualization of organizational effectiveness may be useful only for certain purposes and the usefulness of a particular formulation is a function of both the values of the user and the facts of organizational life. Steers (1975) stated that most models of organizational effectiveness so far have taken a decidedly macro approach, focusing their attention exclusively on such organization-wide variables as profit, productivity, and so on, while the dynamic relationship between individual behavior and organizational effectiveness have been largely ignored. He found only a few of them have used common criteria in determining effectiveness. Katz and Kahn (1966) had warned that the omission of this dynamic relationship may explain the inability to achieve convergence across various measures of effectiveness.

Zammuto (1982) questioned the comparability of ratings of effectiveness across organizations and pointed out the significant divergence in the criteria used to evaluate the performance of general business organizations as compared to research and development organizations:
"Managers in general business organizations employed criteria related to efficiency and productivity in judging effectiveness, while managers in research and development organizations focused on measures related to cooperative behavior, staff development, and reliable performance. Two separate models, a general business and a research and development model, were needed to explain the differences between the two sets of organizations....

The source of the definitional, operational, and comparability problems has been well described in the literature, although few attempts to create novel solutions have been proposed. The problem stems from the basic fact, that different individuals view organizational performance from different perspectives" (p. 26).

Campbell (1977) seemed to have had the idea suggested by Zammuto when he said that:

"...in the end organizational effectiveness is what the relevant parties decide it should be. There is no higher authority to which we can appeal. On the applied level, the task of behavioral science is to assist the people in the organization to articulate what they really mean by organizational effectiveness, show where there are gaps and inconsistencies, reveal conflicts, and help in the resolution of those conflicts. This does not preclude the behavioral scientist from trying to impose his or her own value system as to what constitutes effectiveness, but such an assertion should be recognized for what it is" (p. 52).

Cameron (1978a) stated that:

"Difficulty in empirical assessing organizational effectiveness has arisen because no one ultimate criterion of effectiveness exists. Instead, organizations may pursue multiple and often contradictory goals (Warner, 1967; Perrow, 1970; Hall, 1972; Dubin, 1976), relevant criterion of effectiveness may change over the life cycle of an organization (Yuchtman and Seashore, 1967; Kimberley, 1976, Miles and Cameron, 1977), different constituencies of an organization might have particular importance at one time or with regard to special organizational aspects and not
others (Friedlander and Pickle, 1968; Scott, 1977; and Barney, 1978), criteria at one organizational level may not be the same as those at another organizational level (Price, 1972; Weick (1977), and the relationships among various effectiveness dimensions may be difficult to discover (Seashore, Indik, and Georgopolous, 1960; Mahoney and Weitzel, 1969; Kirchhoff, 1975)" (p. 604).

Cameron (1978a) concluded, that organizational effectiveness may be typified as being:

"- mutable: composed of different criteria at different life stages,
- comprehensive: including a multiplicity of dimensions,
- divergent: relating to different constituencies,
- transpositive: altering relevant criteria when different levels of analysis are used,
- complex: having nonparsimonious relationships among dimensions" (p. 604).

Steers (1977) suggested that effectiveness can best be examined by jointly considering three related concepts and this multidimensional approach has several advantages over the unidimensional one. In particular, the multidimensional approach has the advantage of increasing the comprehensiveness of analysis aimed at better understanding a highly complex subject. The three related concepts are:

"1. the notion of goal optimization,
2. a system perspective, and
3. an emphasis on human behavior in organizational settings" (p. 4).

Cameron (1981a) focused particular attention on four approaches to defining organizational effectiveness. The most
popular one is the goal model of Etzioni (1964), Campbell (1977), Price (1972) and Scott (1977), which defines effectiveness as the extent to which the organization accomplishes its goals. This approach is particularly important in evaluating organizational effectiveness when the organizational goals are clearly defined and easily measured, because the assessment process of it can be free from the evaluator's value judgments. The problem in this approach is that an organization might be judged to be effective in areas outside its goal domain. For example, the National Aeronautics and Space Administration (NASA) can be judged as very effective not only in accomplishing its mandated mission to put man on the moon, but also in producing many useful consumer goods as well as new inventions related to them. Besides, a truly ineffective organization may be judged effective only because its original goals were set too low.

The second approach to effectiveness is called the system resource model of Yuchtman and Seashore (1967). It focuses on input rather than output and evaluates the organizational effectiveness on the extent to which the organization acquires its needed resources from its external environment. The more able an organization in obtaining its resources from its external environment the more effective it is.

The third approach is the internal process model of Argyris (1964), Bennis (1966), and Likert (1967). It is
concerned with the internal functioning of the organization. If the internal processes and operations of the organization are smooth with minimal strain, if its members are highly integrated into its system joined by trust and benevolence towards individuals, and if communication runs smoothly both vertically and horizontally, then the organization is judged to be effective, which some refer to as a "healthy system." Organizations having higher degree of these internal characteristics are more effective than those having a lower degree of these characteristics.

The fourth approach defines effectiveness in terms of the degree to which the needs and expectations of strategic constituencies are fulfilled by the organization. It is called an ecological model by Miles (1980) or a participant satisfaction model by Keeley (1978). Keeley says that the "minimization of regret" is a better way of stating the criterion. A strategic constituency is any group of individuals who have some stake in the organization such as resource providers, groups whose cooperation is essential for the organization's survival, users of the organization's outputs, or those whose lives are affected by the organization. This model measures organizational effectiveness on how well it responds to the demands and expectations of its strategic constituencies.

Cameron (1981b) suggested that the assessment of organizational effectiveness shall depend on the model of the
organization. If the goals of an organization are clear, consensual, and measurable, or when the desired outcome of the organization can be easily identified, and the progress toward the goals are well-monitored, then the effectiveness of this organization can be appropriately assessed by a goal model.

The system-resource model of Yuchtman and Seashore (1967) will be most useful, when the connection and the relationship between the resources received by the organization and the product of the organization is clear. An organization, that is merely able to attract and obtain resources without being able to process them into its desired outputs, is certainly not effective. An organization that simply gathers resources and stores them, or obtaining resources not related to the needs of the organization, is not effective.

When the internal processes and operation of an organization are closely related to its primary task or to what the organization produces, then the internal process model is most useful.

When the constituencies of an organization have powerful influence on what the organization does, then the strategic-constituencies model is most useful in assessing the organizational effectiveness.

Cameron (1981b) summarized the four approaches. See Table 2.1.
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<td>Clear connection between inputs and outputs.</td>
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<td>Internal Process Model</td>
<td>it has an absence of internal strain, smooth internal functioning.</td>
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<td>Strategic-Constituencies</td>
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Cameron discussed the confusions attending the definition and assessment of organizational effectiveness and pointed out the conditions under which each of these approaches is most appropriate and the weaknesses in each approach. He, then, concluded:

"The enigma of organizational effectiveness, therefore, is that a consensual definition of the concept and a consistent approach to its assessment are limited by the nature of modern organizations. The major approaches to organizational effectiveness are altogether inappropriate in certain types of organizations, some definitions of effectiveness may be applicable in some
circumstances and not in others, and the continuing research on organizational effectiveness seems only to add to the fragmentation and variety of the field" (pp. 5-8).

2.2. Problems in Measuring Organizational Effectiveness

Measurement is vitally important in research, and as a matter of fact, in all branches of science. Lord Kelvin said:

"I often say that when you can measure what you are speaking about, and express it in numbers, you know something about it; but when you can not measure it, when you can not express it in numbers, your knowledge is of a meager and of unsatisfactory kind; it may be the beginning of knowledge, but you have scarcely, in your thoughts, advanced to the stage of science, whatever the matter may be."

Organizational researchers have been interested in measuring the effectiveness of organizations for over 50 years, yet they continue to have difficulties in determining the appropriate measurement criterion. They have not yet agreed on the appropriate criteria for measuring organizational effectiveness. What are the most definite characteristics that differentiate effective organizations from ineffective ones? What really constitutes organizational effectiveness is not yet agreed upon.

The confusion about this is due to the difficulty managers have in measuring the effectiveness of one's activities. For instance, consider the measurement of productivity in service industries. How does one measure the
productivity of a professor at a university? Does one count the number of students passing his/her course or the number of courses he/she offers per semester? There are many who believe the educational process becomes less effective when the number of students in the class increases beyond a nominal number, which is believed to be between 15 and 25.

Etzioni (1964) admitted:

"Measuring effectiveness and efficiency raises several thorny problems. When an organization has a goal which is limited and concrete, it is comparatively easy to measure effectiveness. For instance, in the case of two organizations - one whose goal was constructing a canal linking the Red and the Mediterranean Seas and the other whose goal was building a tunnel between France and Britain - it is clear that the former was effective while the latter was not. If the organizational goal is a continuous one, measurement is already more difficult.

...finally, when we come to organizations whose output is not material (e.g., churches), statements about effectiveness are extremely difficult to validate" (p. 9).

In spite of the thought-provoking quotation of Lord Kelvin cited earlier, it should be realized that measurement is not an end in itself, it is only a means to an end. The end objective of measuring organizational effectiveness is to achieve or at least to plan for improvement of the organization. Measurement or assessment is, of course, very important in order to understand the situation and condition of an organization before a useful course of action toward improvement or correction can be undertaken.

The most common interpretation of measurement of
managerial effectiveness and productivity improvement in industrial engineering is that of "time study" or "work measurement", but this covers a restrictive part of the measurements which are useful only in dealing with productivity as such. Besides, the terms "time study" and "work measurement" have unfavorable emotional overtone for some people.

This is why Steers (1977) stressed that:

"In the study of organizational effectiveness, human resources and human behavior should emerge as the primary focal point, and attempts to improve effectiveness must necessarily begin with an examination of such behavior at work" (p. 2).

Steers also believes that the study should integrate the macro and micro levels of analysis and examine how the behavior of individuals and groups ultimately contributes to or detracts from organizational goal attainment. He said that:

"...most models of effectiveness deal solely on the macro level, discussing organization-wide phenomena as they relate to effectiveness, but ignoring the critical relation between individual behavior and the larger issue of organizational success. There is little integration between macro and what may be termed micro models of performance and effectiveness. If we are to increase our understanding of organizational processes - and, indeed, if we are to make meaningful recommendations to managers concerning effectiveness - performance models must be developed that attempt to specify or at least account for the relationship between processes on both the micro and macro levels" (p. 57).

Cameron (1983) also criticized the lack of integration and systematic comparison present in the literature on
organizational effectiveness. He rejected the idea that one universal model of effectiveness can be developed, but he also believes that presenting different perspectives on effectiveness independent of one another will neither improve understanding of effectiveness nor the ability to conduct good research. He insisted that in order to understand organizational effectiveness it is necessary to understand the multiple models. Because none of the models are universally applicable, understanding the relative contributions of several different models, and how these models relate to one another, is the only way to appreciate the meaning of this construct. He strongly believe that organizational effectiveness is the center of organizational models by saying:

"Empirically, the construct of organizational effectiveness is not likely to go away because it is the ultimate dependent variable in organizational research. Evidence for effectiveness is required in most investigations of organizational phenomena. The need to demonstrate that one structure, reward system, leadership style, information system, or whatever, is better in some way than another makes the notion of effectiveness a central empirical issue. Often, terms are substituted for effectiveness such as performance, success, ability, efficiency, improvement, productivity, or accountability, but some measure of effectiveness is usually what is required. (Moreover, the terms being substituted for effectiveness are seldom any more precisely defined than is effectiveness.)

Practically, organizational effectiveness is not likely to go away because individuals are continually faced with the need to make judgement about the effectiveness of organizations. For example, which public school to close, which firm to award a contract to, which company's stock to
purchase, or which college to attend are all decisions that depend at least partly on judgments of organizational effectiveness. Whereas the criteria upon which those decisions are made often are difficult to identify, and whereas considerations other than effectiveness are always relevant (e.g., political and social consequences), individuals nevertheless engage regularly in personal evaluations of organizational effectiveness.

...universalistic propositions linking a set of variables to effectiveness can never be known because the meaning of the dependent variable continually changes. Depending on the model of organizational effectiveness being used, the relationship may disappear, become irrelevant, increase, or reverse themselves. What is needed, therefore, is not a set of propositions designed to set forth universal relationships, but a clarification of the various models of organizational effectiveness - their roots, strength, and weaknesses - and how they relate to one another" (pp. 2, 3).

2.3. Organizing Human Resources

In a modern society such as the United States and many of the other developed countries, it is difficult to imagine any major activity being accomplished other than through organizations. Etzioni (1964) said:

"Our society is an organizational society. We are born in organization, educated by organization, and most of us spend much of our lives working for organizations. We spend much of our time paying, playing, and praying in organizations. Most of us will die in an organization, and when the time comes for burial, the largest organization of all - the state - must grant official permission".

Indeed, modern societies depend very much on different organizations. An organization is the only form of effective
social grouping and the most rational and powerful tool for coordinating human activities. An organization can, and often does, combine natural with human resources, weaving together leaders, workers, scientists, engineers, equipments, capital, and other resources in one working system.

It is not surprising to find, then, that the quest for a better way of managing organizations and utilizing human resources more effectively forces men to study organizational effectiveness. No one can deny the fact that in this world of constant change, a success today does not ensure success tomorrow, much less success forever. The design of an effective organizational system should be based on sound theory, which can be applied daily to influence day-to-day activities. As was noted earlier, the survival of a developing nation depends upon its ability to expand the capability and quality of its human resources, so that they can cope with the demand of a modern developed nation. It was also suggested that the only way to accomplish this position is by establishing the effective management of higher education systems.

No matter how indispensable institutes of higher learning are for the survival of the third world countries, it is realized that they have no immunity to organizational mortality. Even in the most established nation such as the United States the annual rate of mortality of colleges and universities is higher than that of business organizations
and federal government bureaus. Zammuto (1984) reported the mortality rate of colleges and universities in the United States between 1971 and 1981 to be 117.6 per 10,000, and found that this number increased since the early 1970s. This can be compared to those reported by Katz and Kahn (1978), who found the mortality rate of business organizations between 1924 and 1973 average only 57 per 10,000, and Kaufman (1976) reported a government bureau mortality rate of 28 per 10,000. It is evident that the mortality rate of colleges and universities is considerably higher.

Cameron and Whetten (1983b) illustrated the reasons why, in the last decade, the mortality rate of the institutions of higher learning in this country is so high:

"1. Over-expansion during times of abundance. In their study of several large industrial firms Starbuc et al., (1978) observed a pattern they labelled the "success breeds failure syndrome." A common characteristic of these organizations was a long period of rapid growth fostering overconfidence and overexpansion. Top management became convinced that the firm's past impressive performance put it in a position of dominance that could withstand the challenges of emerging competition. Consequently, management tended to ignore early indications of changes in consumer preferences, they failed to keep up with technological advances, and began taking the loyalty of employees and other stockholders for granted.

A similar pattern was observed in a recent study of the responses of small colleges to declining enrollments during the early 1970s. In this study Chaffee (1982) found that the colleges having the most difficulty responding to a precipitous drop in revenues had significantly overexpanded during the preceding decade. During this period of abundant resources they had built too many new
dormitories, hired too many new faculty members, and initiated too many new degree programs based on unrealistic projections of future student demand.

2. Inadequate management controls. During the periods of rapid expansion there are few incentives for tight management control. Slack resources reduce the need for prioritizing since most reasonable demands on the budget can be satisfied. Furthermore, program and personnel evaluations are rare because there is insufficient justification for invoking the confrontations inherent to any assessment of quality or utility. This problem is illustrated by the example of an industrial firm that was confronted with the need to drastically cut back their management personnel due to a substantial drop in sales. When the manager charged with the responsibility of formulating a retrenchment plan requested reports on the performance appraisals that had been conducted during the preceding period of rapid growth, he found that this information was available for less than half of the managers.

A similar pattern was observed in Chaffee's (1982) study of retrenchment management in colleges. The colleges that had the greatest difficulty recovering from the drop in enrollment were those that had the crudest financial controls. Not knowing exactly how bad their financial situation was in the first year or two of their decline, the colleges continued spending based on precedent. When they finally became aware of their large debt, the options for recovery available to them had dwindled considerably. Furthermore, imposing much needed financial controls was viewed as a punitive action because the controls were implemented concomitant with severe austerity measure.

3. Lack of collaboration and self-protection. One of the paradoxes of retrenchment in higher education is that most effective responses require collaboration between internal groups (e.g., academic departments, faculty and administration). However, scarcity quite predictably results in heightened inter-unit conflict. Different interest groups become competitive as they vie for a share of a reduced
resource pie. The challenge of overcoming this natural egocentric response to scarcity has been exacerbated in many universities by an orientation toward diversity and decentralization during periods of abundance. That is, increased diversity often inhibits effective responses to the decline.

For example, several successive cutbacks in state support for the University of Wisconsin system in the early 1980s led to self-protective and competitive behavior. High diversity exists in this system, but the diversity inhibited a unified stance and a consistent strategy for the dealing with retrenchment. Individual campuses competed with one another for resources, one campus actively lobbied to be removed from the system and have its own budget, and "turf-consciousness" became a prevailing attitude among the various campuses as they tried to protect their fair share of the resource pool.

4. Rigidity in problem solving approach. When the need for retrenchment follows a period of rapid and sustained expansion, administrators experience considerable personal stress (Whetten, 1981). Since many have little personal experience with managing this type of crisis, and since acknowledging the need for a drastic change in policy is perceived by many as an acknowledgement of personal failure, administrators tend to respond in a very cautious manner. They often are slow to admit that the organization is experiencing a major problem, and they are unwilling to entertain conflicting suggestions for change that sharply diverge from their own views. The tendency is to rely on a few trusted advisors who will be supportive of their initiatives during this time of adversity (Whetten, 1980). The result is that the causes of crisis are frequently misdiagnosed and innovative solutions are spurned.

This process is clearly evident in Cameron's (1983) study of organizational effectiveness in institutions of higher education. He found the orientation of administrators in universities declining in enrollments differed significantly from administrators with growing or stable enrollments. Specifically, decliners tended to be internally focused, conservative in orientation,
and reactive in responding to change, whereas the stable and growing groups were externally oriented, innovative and proactive in their responses.

5. **Long-range planning is curtailed.** A common response to a crisis is the loss of a long-term perspective. Immediate problems are so pressing that administrators readily mortgage their future in hopes of gaining relief. Symptoms of this myopic reaction include deferred maintenance, relying on seniority as the criteria for reducing staff reductions, and the elimination of the planning and development functions in the organization. The cumulative result of these responses is to accentuate the least adaptive features of the status quo. The physical plant is not improved, the faculty becomes stagnant and educational programs are not upgraded. Overall, the short-term savings resulting from these initiatives may be substantially smaller than the longer-term costs. Maintenance may be considerably more costly in the future, the lack of commitment to far sighted planning may encourage the most innovative faculty to leave, and the overall reduction in campus morale may discourage strong student recruitment. The debilitating effect of these short-term policies was so pronounced in one college studied by Chaffee (1982) that some members of the board of trustees actually privately advised the children of friends to apply to other colleges" (pp. 271-273).

In the third world countries, the mortality rate of higher educational systems may not be a matter of major importance, as most colleges and universities are run by the government. But mere existence of the colleges or universities will not assure the survival of a nation. What is most important for the universities in the third world countries, above existence, is an effective higher educational system. The number of high school graduates interested in higher education is always more than any
college and university can admitted. In Indonesia, for example, the total enrollment is about 10% to 15% of the total applicants each year since 1966. Amidjaja (1984) reported in RIHED (Regional Institute of Higher Education and Development) bulletin about student admission:

"Indonesian higher education is facing the typical dilemma of limited resources and virtually unlimited needs. Particular in a time of limited budgets, the system has an explosion of candidates while the country needs better educated and trained high level manpower. The limited number of trained manpower at all levels is recognized as the single most limiting factor on Indonesia's development.

Many of Indonesia's problems in higher education are tightly linked to admissions policies although it is also true that they will only be part of the solution. A system of higher education also depends on the quality of the secondary and primary school systems, and on the academic ability and motivation of its young people.

Over the next decade, the government plans a rapid expansion of higher education. As the system of higher education expands, the importance of better admission procedures is emphasized. The first dimension of admissions policy is increasing the efficiency of what might be called "academic production". As enrollments expand and pressures mount to produce more graduates, there will also be strong incentives to lower academic standards...." (p. 6).

No doubt, Amidjaja is concerned about organizational effectiveness of the higher education system in his country, although he did not differentiate between efficiency and effectiveness. What Amidjaja seems to be saying, and as it has been emphasized earlier, higher education needs to develop a relevant program which meet the needs of a nation
for national development. Priority decisions in higher education development should be based on the projected needs of the national development and the optimization of the limited available resources. The higher education system should be able to supply adequate manpower in due time to carry out the tasks in various fields of works needed in the process of national development, particularly in the process toward industrialization, where the role of science and technology become indispensable and eminent.

So far, not only is the number of graduates produced by the present universities still far below what is demanded, but the types of the graduates are also not yet relevant to the needs of the nation. The present higher education system can only produce about one quarter of projected manpower needs in engineering, science and business administration and about two third of the needs in agriculture. This low level of output is not merely due to a shortage of funds. It can be attributed to various dimensions of ineffectiveness, such as a low level of satisfaction and security felt by staff and administrators, lack of academic freedom and a limitation of freedom of expression, inadequate and poor planning of physical facilities, lack of textbooks, and instructional materials, and laboratory equipment, insufficient time devoted to teaching, and poor quality of staff members. Amidjaja reported that "less than three per cent of staff in public universities hold Ph.D. degrees"
(1984, p. 7). Performance appraisal has never been seriously considered, let alone applied. These may be parts of the criterion of organizational effectiveness of educational system, which have been seriously neglected.
3. METHODOLOGY USED IN MEASURING ORGANIZATIONAL EFFECTIVENESS OF UNIVERSITIES

The review of literature makes it evident that a simple ratio does not exist which indicates an organization's degree of effectiveness. Organizational effectiveness, as a construct, is measured by a set of value criteria which are dependent upon the judgments of different individuals. Organizational effectiveness, we have noted, is not the same as organizational efficiency, which may be independent of individual judgement. An organization may be efficient without being effective or it may be effective without being efficient. The relationship, or correlation between effectiveness and efficient may be positive, or negative, or there may be no relationship at all between these two concepts.

Organizational effectiveness may also change over time. What is likely to be judged effective performance at one point in time may be judged ineffective over another time period due to social changes during the time period over which the performance takes place. Therefore, an attempt to assess organizational effectiveness must be centered on the unique dynamics of the specific organization in relation to the organizational environment.

Measuring the effectiveness of a college and/or
university must start by first knowing the special organizational characteristics of that institution of higher learning. The important difference between an industrial organization and an organization of higher education must be appreciated. Education is usually service-oriented, and its primary element is people and their relationship with its customers, which are students and/or their parents. Therefore, an enthusiastic sense of the value of the individual person has always been a hallmark of an educational organization's staff and managers.

In most profit oriented organizations, such as manufacturing, retailing, health care, and service organizations, goals and desired outputs are often rather easily specified. It is also practical in profit oriented organizations to form project groups comprised of a number of experts to work on a special assignment. Such groups of experts are usually aggregated for fixed periods of time, in a specialized unit, where goals are clearly specified and accepted by those involved. The specialists are often single-function professionals whose expertise are usually responsible for one project at a time with a required due date (Bess, 1982, pp. 162-163).

When compared to an industrial organization, the tasks of faculty members in an institution of higher education are judged to be ambiguously defined across three broad areas, i.e., teaching, research, and community service. Therefore,
faculty members are called upon to do research, teaching, and service projects simultaneously. Thus, faculty members may be identified as multiple-function professionals, who, as Charns et al. (1977) found, tend to be less sensitive to the differences among the various tasks in the different areas in which they work, and tend to ignore subtleties and nuances that should affect their behavior as if to "blur together perceptions of their several functions". A professor in a university may have to spend hours of his/her precious time with freshmen students discussing simple but basic theories or elaborating unsophisticated problems without regard for the impact of this pedagogy on the total production or efficiency of the university. A common characteristic of university staff members and decision makers are the extra strong commitment to truth, the pursuit of knowledge, and the service to society, which are blended in a desire to participate in the improvement of the human behavior and the betterment of social condition through education.

Comparing the two systems, Bess (1982) said:

"multiple-function professionals will perform less efficiently when they are organized in self-contained departments not oriented toward any one particular output....

...since evaluation of the professionals is by peers, the latter must be qualified to make judgments in all of the competencies expected of the department member. Whereas in a industrial-type single-function or process department, peers may be so qualified, it is unlikely that this is so when
so many different kinds of academic skills are required. Indeed, in present-day academic departments in universities, there is usually some doubt that departmental peers can adequately judge the effectiveness of the departmental member even in his/her research endeavors" (Bess, 1982, pp. 164-165).

The institution of higher education are also complex organizational systems with great diversity and scope that require a variety of different management skills. Educational organizations may be more difficult to manage and its results may not be as easy to measure as it might be in an industrial organizations. This may be because of the organizational complexity, but more so because of the intangible nature of its products.

Weick (1976) said that educational organizations are "loosely coupled system". Cameron (1978a) applied the terms "organized anarchy" to educational organization, while March and Olson (1976) have suggested that higher education organization systems are "complex 'garbage cans' into which a striking variety of problems, solutions, and participants may be dumped."

What they really seemed to be saying is that higher education organizational systems are composed of weakly bonded subunits, where the degree of independence between its subunits and between individuals is highly maintained. In fact, independence or academic freedom is truly essential to this system in order to motivate faculty and provide for creative thinking and an innovative atmosphere. A higher
education system must also be an open system, which is in constant interaction with its environments, yet having ordered and predictable relationships among its members. It has the ability to exhibit dynamic qualities in its organizational structures, boundaries, goals, and its changing constituencies. In general, the institutes of higher education have the following characteristics (Cameron, 1978a, p. 31):

a. lack of coordination, and minimum regulation and inspection,
b. decentralization and lots of delegation,
c. not many variables in common between different subsystems,
d. variety of means to produce one end,
e. less feedback from outcomes to inputs or processes,
f. diversity in response styles and adaptation strategies,
g. organizational processes have no direct links to the outcomes.
h. possible impermanence and dissolvability.

However, there are times when a typical educational organization may become a "tightly coupled system" based upon a reaction to strong pressures for managerial accountability. Cameron (1978a) in his doctoral dissertation reported:
"Austerity programs and zero growth budgets are no longer uncommon in single institutions or in state educational systems. Instances of wealth or "flushness" in colleges and universities, common twenty years ago, are now extremely rare. Accountability pressures have produced tight controls and expanding regulations regarding funds expenditures, and resource allocations. Academic departments are seldom "agents unto themselves" in financial matters, and a tight coupling analogy has become more accurate in budgetary matters than the reverse. (Exceptions to this rule occur mainly in graduate schools or professional programs which may have private endowments or autonomous funding sources.)" (pp. 32-33).

Cameron (1978b) concluded, that institutions of higher education vary on a continuum from loose coupling, i.e., organized anarchies, to tight coupling, i.e., structured bureaucracies. Cameron (1978b) therefore suggested:

"The problem of studying organizational effectiveness in organizations which vary on the loosely coupled to tightly coupled continuum lies in identifying a core group of effectiveness criteria that are relevant to organizational members, applicable across subunits, and comparable across institutions" (p. 611).

Institutions of higher education in the third world countries are usually comparable to a tightly coupled systems in the spectrum of this continuum, not only in budgetary matters, but in some instances in all policy decisions. This might have something to do with the traditional values of the people as it has in the limitation of available funds. Following the steps suggested by Cameron, this study will be oriented toward identifying those criteria which are a measure of organizational effectiveness within institutions of higher education in
Malaysia. Malaysia has been chosen for this study, for the following reasons:

   a. Malaysia is judged to be about in the middle of the continuum between tightly coupled and loosely coupled system.

   b. Malaysia is believed to have the highest rate of progress particularly in the last decade when compared to their neighboring countries in the South East Asian region.

   c. Malaysian's government policy on education is believed to be the most suitable one for the present condition and situation of its people as well as for the urgent demand of the country.

We have utilized a model similar to the one used by Cameron for measuring organizational effectiveness of institutes of higher education in New England. The author has identified a core, or dominant group of variables, which are considered to have the greatest impact on the direction and functioning of an organization of higher education in Malaysia. This included the vice-chancellor and his deputies, deans, department heads, the treasurer and assistant treasures, the registrar and assistant registrars, and the librarian.

We believe it is a fact, that institutes of higher education have a larger number of constituencies than those
mentioned above, both inside as well as outside of the institutes. There are government agencies, students and their parents, alumni, faculty members, administrators etc. However, different constituencies may have different valuations and perceptions of organizational effectiveness in an educational institution depending on which criteria that constituency views as a measure of effectiveness. It is not practical to attempt to include all of those constituencies in this research effort, and we have therefore, limited our research to this significant group. We also identify this group as the dominant group, because of its function and position as decision makers within the system.

In this research, the above mentioned group had been selected following the suggestion of prominent authors such as Yuchtman and Seashore (1967), and Pennings and Goodman (1977). These authors argued that the dominant coalition should be the sources of organizational effectiveness criteria and measurement because this group comprises the resource allocators, the detailed policy and decision makers and the implementors as well as the explicators of institutional goals. Although, different constituencies in the dominant coalition might see different degrees of importance of the same criteria, somehow the preferences and expectations are aggregated, combined, modified, adjusted, and shared by this group. Pennings and Goodman suggested
that "consensus among members of the dominant coalition can be employed as a vehicle for obtaining effectiveness data" (1977, p. 152).

Moreover, in the third world countries such as Malaysia, the dominant coalition group is not only responsible for determining the effectiveness of the institution, but it is also assigned to establish the practical goals of the organization and, therefore, can be considered as the only group that legitimately may determine the criteria of effectiveness. This group also will be the most interested in the information about organizational effectiveness as this group would logically use this information in its decision making process.

The students are not included in this group, because they are not well-informed about the workings of the overall university and they are not in a position to directly impact the policy and functioning of the university. It is also interesting to note, that the majority of the students in Malaysia receive scholarship from the government, or semi-official agencies.

Nine effectiveness dimensions with 118 variables were proposed and applied by Cameron (1978a) in assessing organizational effectiveness of universities in New England. These criteria have been carefully modified by the author in order that they will be applicable to the unique conditions in Malaysia. The criteria are:
1. **Student Academic Development** comprised of criteria indicating the extent of academic attainment, growth, and progress of students at the institution.

2. **Student Career Development** comprised of criteria indicating the extent of career or occupational development of students and the career development emphasis and opportunities provided by the institution.

3. **Student Educational Satisfaction** comprised of criteria indicating the degree of satisfaction of students with their educational experiences at the institution.

4. **Student Personal Development** comprised of criteria indicating student development in nonacademic, noncareer oriented areas, e.g., socially, emotionally, culturally, or religiously, and the personal development emphasis and opportunities provided by the institution.

5. **Professional Development and Quality of the Faculty** comprised of criteria indicating the extent of professional attainment and development of the faculty, and the amount of stimulation toward professional development provided by the institution.

6. **Faculty and Administrator Employment Satisfaction** comprised of criteria indicating satisfaction of the
faculty members and administrator with their job and employment at the institution.

7. **Ability to Acquire Resources** comprised of criteria indicating the ability of the institution to acquire resources from the environment such as good students and faculty, financial support, etc.

8. **System Openness and Community Interaction** comprised of criteria indicating the amount of community service as well as the emphasis placed on external environmental interaction and adaptability at the institution.

9. **Organizational Health** comprised of criteria indicating the benevolence, vitality and viability of the internal processes and practices at the institution.

Appendix 11 shows the questionnaires utilized in this research. As was mentioned above, this instrument was originally used by Dr. Kim S. Cameron in his research on Measuring Organizational Effectiveness in Institutions of Higher Education in New England. With his permission, the original instrument has been modified to suit the conditions and the situation in Malaysia. Appendix 1 contains the author's letter to Dr. Cameron requesting his permission to use and modify the instrument and Appendix 2 contains his letter of consent.
Some informal as well as official steps needed to be followed before the questionnaire could reach the dominant constituencies. First of all, it was necessary to gain the willingness of the dominant constituencies to cooperate in this research. This was obtained by personal approach to the deputy vice chancellor of academic affairs of each university we expected to have involved in this undertaking. In these meetings, anonymity for all respondents and institutions was guaranteed and feedback containing the result of the study was promised to each participating university. This was done during summer of 1983, when the author was visiting Malaysia promoting this purpose.

The writer also learned during this first visit that a special permission for a noncitizen of Malaysia to perform research must be obtained from the office of Prime Minister of Malaysia. The author was first discouraged by this regulation until he was personally assured by his long time closest friend H. E. Mr. Anwar Ibrahim, then, The Minister of Youth, Culture and Sport, that this permission could be obtained easily upon his recommendation. A letter of request for this special permission was sent to the Director General of Socio Economic Research Unit (SERU), Prime Minister Department in Kuala Lumpur (shown in Appendix 3) via Mr. Anwar Ibrahim. This request was supported by a recommendation letter from Prof. Dr. C. E. Smith, shown in Appendix 4. SERU granted permission by sending a letter of
consent to all universities.

The distribution of the questionnaire and the gathering of the data was done during the summer of 1984. The first university visited was UKM (Universiti Kebangsaan Malaysia = National University of Malaysia), which is located in Bangi, about 40 miles south of Kuala Lumpur, the capital city of Malaysia. The author met the Deputy Vice-Chancellor of UKM in charge of academic affairs, Dr. Nik A. Rashid Ismail, who advised him to submit a formal letter of request for permission to distribute the questionnaire and meet with all the deans and department heads in his campus.

The author also learned from some of the senior staff members that those people are usually reluctant to complete a questionnaire without being urged and convinced about its importance. Instead of sending the questionnaires by mail as it was planned, we then decided to meet personally with as many staff members and administrators as possible in their offices. The university was on vacation between April 29 and July 3, and the religious fasting month had just started when the author arrived on that campus. The atmosphere seemed to be relaxed, and making appointments to meet with the officials was relatively easy. Upon the recommendation of the Dean of the Faculty of Education the author was provided with one the university guest houses, during this period, enabling him to save considerable time and cost in commuting between Kuala Lumpur and Bangi.
A letter of request to distribute the questionnaires was submitted to the Deputy Vice-Chancellor of UKM in charge of academic affairs. This letter was accompanied by a copy of the letter of consent from SERU. The deputy vice chancellor then issued a memorandum requesting all deans and department heads and administrators to cooperate in this research by filling out the questionnaires and being ready to give the information needed. With this memorandum in hand the author visited all the deans and administrators in their offices to request their cooperation to fill out the questionnaire and to distribute them among their subordinates. These visits usually were welcomed by the respective deans and administrators with their willingness to be interviewed.

This university has eight faculties:

1. Faculty of Economy
2. Faculty of Islamic Study
3. Faculty of Business Administration
4. Faculty of Medicine
5. Faculty of Science and Applied Physics
6. Faculty of Biological Sciences
7. Faculty of Science and Natural Resources
8. Faculty of Social Science and Humanities.

The second university visited was U. P. M. (Universiti Pertanian Malaysia= University Agriculture Malaysia), located at Serdang, Selangor, at the Southern boundary of
the Federal Territory of Kuala Lumpur, about 14 miles from the capital city.

Universiti Pertanian Malaysia was officially established on October 4, 1971, as a merger between the College of Agriculture - established in 1931, providing agricultural training at diploma (sub-professional) level - and Faculty of Agriculture of University of Malaya, which was established in 1956.

The Deputy Vice-Chancellor of Academic Affairs of this university was very cooperative. He seemed to be more informal and did not require an official letter of request to initiate the research and did not feel necessary to issue a memo to his subordinates regarding this research program. He appreciated the significance of the research and was willing to give information asked and suggested that the author meet with anyone necessary to persuade them to cooperate in order to get the data needed from his subordinates. The author was also advised that his response to the questionnaire would be available after three days.

The author also was provided with accommodations in one of the guest houses during the research. The university was in long vacation (from April 29 until July 3, 1984), and it was in the month of Ramadhan, when all Muslims are fasting. The atmosphere seemed to be relaxed, and making appointment to meet with the officials was as easy as at UKM. The author also visited all the deans in their offices to ask for their
cooperation in this project to distribute the questionnaires among the department heads. In some faculties, the author also met with the department heads to discuss the objective of the research project while encouraging them to complete the questionnaire and to provide additional information.

There are nine faculties in this university:

1. Faculty of Agricultural Engineering
2. Faculty of Agriculture
3. Faculty of Educational Studies
4. Faculty of Fisheries and Marine Science
5. Faculty of Food Science and Technology
6. Faculty of Forestry
7. Faculty of Resource Economics and Agribusiness
8. Faculty of Science and Environmental Studies
9. Faculty of Veterinary Medicine and Animal Science.

The author also visited all three Deputy Vice-Chancellors, Registrar's office, Treasurer (Bursar), and Chief Librarian.

The third University was the University of Malaya, the oldest university in Malaysia. It was established before the second world war as an extension of the University of Singapore. It is located in Kuala Lumpur.

As a well-established university, the procedure of research work in this campus seemed to be easier, although it was more formal. The author needed to visit only two officials on this campus. The first one was the Deputy Dean
of Institute of Advanced Studies of the University of Malaya. This institute is responsible for coordinating all research programs in this university. He wanted the author to submit an official letter of application to perform research, and a letter of approval from SERU. He then asked the purpose of the research, the expected respondents to the questionnaire, and received the questionnaire to be distributed among the expected respondents by his office. He advised the author to call him up after three weeks in order to pick up the completed questionnaire. After calling up the treasurer of the university explaining the purpose and the information needed for this research, he sent the author to meet the treasurer in order to collect the materials containing the information.

This university has ten faculties and one institute of advanced studies; each headed by a dean. The ten faculties are:

1. Faculty of Economy and Administration
2. Faculty of Engineering
3. Faculty of Education
4. Faculty of Dentistry
5. Faculty of Medicine
6. Faculty of Sciences
7. Faculty of Literature and Social Sciences
8. Faculty of Law
9. Faculty of Islamic Jurisprudence
10. Faculty of Islamic Theology

The fourth campus visited was ITM (Institut Teknology Mara = Mara Institute of Technology), which is located in Shah Alam about 12 miles west of Kuala Lumpur. The embryo of ITM was founded in 1956 in the form of Training Institute for RIDA (Rural and Industrial Development Authority). This Training Institute provided a variety of short courses of various durations, e.g., from 18 days for small retailer training to a two year program for preparation for the London Commerce Higher Examination. In 1967, this Training institute was upgraded into Institute of Technology MARA (Majlis Amanah Rakyat = Council of People's Trust), providing three year non-degree program in all kinds of professional courses in order to meet the need of the rapidly developing industrialization of Malaysia. It was, then, under the Ministry of Rural and State Development until 1976, when it was put under the Ministry of Education. The institute now has branches all over country, one branch in each state. The Shah Alam campus has started offering four year degree program beside the diploma courses since 1975.

The author went to this campus to officially meet the director of this institute on the appointed date and time. He was enthusiastic and eager to cooperate and directed the author to meet with his deputy in charge of academic affairs. The distribution of the questionnaire was done by
the office of academic affairs.

The fifth university studied was USM (Universiti Sains Malaysia = University of Science of Malaysia). USM is located in Penang, the second major city in Malaysia on a small island of Penang, about 250 miles north of Kuala Lumpur. The author met with the deputy vice-chancellor of academic affairs, who was willing to cooperate enthusiastically and to distribute the questionnaire among the expected respondents. The author stayed in Penang waiting for the results for two weeks while visiting the deans and the department heads to persuade them to fill in the questionnaire and getting some inside information. The author also was granted the time to meet with the vice-chancellor, who expressed his enthusiasm about the research and expressed surprise that the author had selected Malaysia rather than Indonesia for this study.

This university has a unique system of management. The undergraduate studies are offered and provided by fourteen centers of study instead of faculties. This system can provide a flexible interdisciplinary programs suitable for each student according to his/her talent and interest. Each center of study is headed by a dean. They are:

1. Center of Study for Pharmaceutical Sciences
2. Center of Study for Physical Sciences
3. Center of Study for Applied Sciences
4. Center of Study for Biological Sciences
5. Center of Study for Humanity Sciences
6. Center of Study for Social Sciences
7. Center of Study for Chemistry Sciences
8. Center of Study for Mathematical Sciences
9. Center of Study for Educational Sciences
10. Center of Study for Medical Sciences
11. Center of Study for Housing Design and Development.
12. Center of Study for Basic Research
13. Center of Study for Field (Off-Campus) Studies
14. Center of Study for Matriculation

This management system seems to be similar to what Cleland (1984) called a matrix management system. The system is meant to provide a wider variety of opportunities to each student for progress according to his/her ability and irrespective of his/her previous educational background.

One of the most important impressions the author obtained from meeting with all the dominant constituencies of Malaysian universities is that they all have the same conviction and dedication that in Malaysia, education in general, and higher education in particular and in its broadest perspective is the largest single factor in their public affairs. Actually, there are more people, more funds and manpower engaged in this field of endeavor than in any other field in Malaysia. The government of Malaysia has treated education as its most important task and expects the role of each institution of higher education to be of utmost
importance in achieving the necessary transition towards industrialization of the country. All Malaysian universities' decision makers seem to believe that a well-planned and a well-managed higher education system will be the master-fountain for all high level human resource development. This development, in turn, is believed to be the key to flourishing economic growth, and genuine religious, social, and cultural advancement. They all are devoted to the ultimate objective of their national educational policy which is to bring together the Malaysian children of all races under one national educational system in which one national identity will be prospered.
4. METHOD OF DATA ANALYSIS

The collected data were analyzed using a method of factor analysis. This method has become popular among researchers and students, primarily because of its availability in packaged computer programs, such as SAS, SPSS, DATATEXT, OSIRIS, and BMD. In this case, the author used SAS (Statistical Analysis System), which is available through the Iowa State University Computer Center.

In factor analysis, we assume that an observed or measured set of variables are linear combinations of some underlying source variables, which are usually unobserved by the researcher. The observed variables are created out of those which are unobserved. These underlying source variables are also called underlying factors, hypothetical variables, hypothetical factors, or a hypothetical construct. Of these factors, those which are involved in the creation of only one observed variable are called unique factors, or specific factors (Johnson and Wichern, 1982), or just errors (Maxwell, 1977); and those that are involved in creating two or more observed variables are called common factors. These hypothetical factors are responsible for the covariation among the observed variables. The unique factors are assumed to be orthogonal to each other, i.e., the unique factors do not contribute to the covariation among the
observed variables. Only the common factors contribute to the covariation among the observed variables; and the number of these common factors is much smaller than the observed variables.

The main purpose of factor analysis is to describe, whenever possible, the covariance relationships among a set of observed variables in terms of a fewer number of underlying, but unobservable, random quantities, which are called factors. If the observed variables can be grouped by their correlations so that all variables within a particular group have relatively high correlation among themselves, but have relatively lower value of correlation with variables in a different group, then it is conceivable that each group of variables represents a single underlying factor, or construct. These factors must be responsible for the observed correlations. In this organizational effectiveness study, we are going to call these underlying factors the dimensions of effectiveness.

4.1. Applied Factor Analysis

Based on the above assumption, the first step of factor analysis always involves an examination of the interrelationships among the observed variables in a data set. As a measure of these interrelationships, we used the correlation coefficient and prepared a correlations matrix.
There are two forms of use of factor analysis.

4.1.1. Exploratory factor analysis: If a researcher does not have any idea as how many common factors there are in a given data set, the exploratory method of factor analysis may be utilized. This approach is an expedient way of ascertaining the minimum number of hypothetical factors that may account for the observed covariance. This is probably the more common technique utilized when researching topics in the social sciences.

4.1.2. Confirmatory factor analysis: Factor analysis can also be used as a means of testing specific hypotheses, if the researcher may have anticipated or hypothesized that there are several different underlying dimensions and that certain variables belong to one dimension while others belong to the other dimension. Factor analysis used in testing this expectation is said to be used as a means of confirming a certain hypothesis and is referred to as confirmatory factor analysis.

It is also possible that the researcher may have specified an expected number of common factors, say ten factors, but is unable to anticipate exactly which variables belong to each factor. As an example, assume a researcher is very sure that on the basis of a well-known theory that there are two separate dimensions of what is called liberalism. The first dimension is related to economic issues and the second dimension is concerned with equal
rights issues. Out of ten observed variables, say X1 - X10, the researcher is not sure whether variable X6, which reflect the opinions about providing food stamps to poor widows with preschool children reflect the dimension of economic liberalism, or the dimension of equal rights. Factor analysis, in this case, will check out which variables belong to which dimension, say X1-X5 reflect the dimension of economic liberalism, and X7-X10 reflect the equal rights issues, while X6 is related to both dimensions. The researcher, then, can draw a conclusion that X6 must be rejected from the dimension of liberalism (Kim and Mueller, 1978a).

There is a difference of opinion on which of the above two approaches is preferable. Therefore, ascertaining the underlying common factor structure from the observed covariance structure is always problematic, which has nothing to do with statistical valuation and must be resolved on the basis of extra statistical postulates, which are:

1. The postulate of factorial causation, i.e., the assumption that the observed variables are linear combinations of underlying factors, and that the covariation between observed variables is solely due to their common sharing of one or more of the common factors; and
2. The postulate of parsimony, which stipulates that,
given two or more equally compatible models for the given data, the simpler model is believed to be true. In factor analysis, only the model involving the minimum number of common factors is considered appropriate.

Applying these postulates and linear system properties, one can then identify exactly the underlying factor pattern by an examination of the resulting covariance structure. This assumes the underlying pattern is relatively sufficiently simple and satisfies the requirements of simple factor structure.

Three steps are usually needed to obtain solutions to factor analysis. They are:

1. The preparation of an appropriate covariance matrix,
2. The extraction of initial (orthogonal) factors; and
3. The rotation to a terminal solution (Kim and Mueller, 1978b, pp. 8-10).

4.2. Mathematical Foundation of Factor Analysis

The factor analysis model is:

\[
X_1 - \mu_1 = l_{11} F_1 + l_{12} F_2 + \ldots + l_{1m} F_m + \epsilon_1 \\
X_2 - \mu_2 = l_{21} F_1 + l_{22} F_2 + \ldots + l_{2m} F_m + \epsilon_2 \\
\vdots \\
X_n - \mu_n = l_{n1} F_1 + l_{n2} F_2 + \ldots + l_{nm} F_m + \epsilon_n
\]
or, in matrix form,

\[ X - \mu = L F + \epsilon \]

The \((n \times m)\) matrix \(L\) is called the matrix of factor loading, and its entry \(l_{ij}\) is called the loading of the \(i\)-th variable on the \(j\)-th factor.

The entries of matrix \(F\) are called common factors and the \(\epsilon_i\) is the error or specific factor. In many investigations, as found by Maxwell, the \(\epsilon_i\)'s tend to be combinations of measurement error and factors that are uniquely associated with the individual variables, thereby called unique factors. \(\mu_i\) is the mean of the variable \(X_i\).

In practice, a direct verification of the factor model from a data set with a large number of observed variations \(X_1, X_2, \ldots X_n\) with so many unobservable quantity of factors is almost impossible. However, by additional assumptions about the random vectors \(F\) and \(\epsilon\), the above model implies certain covariance relationships, which can be checked.

The additional assumptions are:

\[ E(F) = 0, \quad \text{Cov}(F) = E[FF'] = I \]

\[ E(\epsilon) = 0, \quad \text{Cov}(\epsilon) = E[\epsilon \epsilon'] = \Psi = \begin{bmatrix}
\psi_1 & 0 & \ldots & 0 \\
0 & \psi_2 & \ldots & 0 \\
0 & 0 & \ldots & 0 \\
0 & 0 & \ldots & \psi_n
\end{bmatrix} \]
F and $\epsilon$ are independent, that is:

$$\text{Cov}(\epsilon, F) = E[\epsilon F'] = 0$$

The above model and those assumptions constitute what is called the Orthogonal Factor Model. This model implies a covariance structure for the variables ($X$'s), from which the following can be written:

$$(X - \mu)(X - \mu)' = (LF + \epsilon)(LF + \epsilon)'$$

$$= (LF + \epsilon)[(LF)' + \epsilon']$$

$$= LF(LF)' + \epsilon(LF)' + LF\epsilon' + \epsilon\epsilon'$$

so that

$$\Sigma = \text{Cov}(X) = E(X - \mu)(X - \mu)'$$

$$= LE(FF')L' + E(\epsilon F')L' + L E(F\epsilon') + E(\epsilon\epsilon')$$

$$= LL' + \Psi$$

Also

$$(X - \mu)F' = (LF + \epsilon)F' = LF' + \epsilon F'$$

so that

$$\text{Cov}(X, F) = E(X - \mu)F' = LE(FF') + E(\epsilon F') = L.$$


In the case of this study, the number of variables (questionnaire's items) is 130, but the last 18 variables regarding the union were determined to not be relevant to
the situation in Malaysia. The union of staff members and administrators in the universities in Malaysia does not function as does a union in the USA. The university staff association in Malaysia is established merely as a social gathering rather than for collective bargaining. The number of variables in this study, then, was reduced to 112. The respondents who gave 12 (10%) or more blanks were rejected in this analysis. There were only 11 (less than 6%) questionnaires rejected out of the total 197 returned. It was assumed that the respondents who left a questionnaire item blank are not sure about the item. Therefore, the remaining questionnaires with 11 or less blank items the blanks were replaced by 50 on the 1-99 scale questions, and 4 on 1-7 scale questions.

As it was suggested above, the first step in factor analysis involves an examination of the interrelationships among the observed variables in the data set and the extraction of the minimum number of common factors which would satisfactorily produce the correlations among these variables. Assuming there were no measurement and sampling errors and the appropriateness of factorial causation for the data, there must be an exact correspondence between the minimum number of common factors responsible for a given correlation matrix and the rank of the adjusted correlation matrix. But, in the presence of sampling errors we cannot rely on the ranking theorem. The effort then should be
concentrated in finding some criterion with which to evaluate the minimum number of common factors and determine how well these common factors can reproduce the observed correlations. This means that we have to decide when to stop extracting common factors, which involves determining when the discrepancy between the reproduced correlations and the observed correlations can be attributed to sampling variability.

4.2.1. Extraction of initial factors

The first effort in applying the extraction method was to hypothesize a minimum number of common factors necessary to reproduce the observed correlations. In our case, we hypothesized there should be nine dimensions (common factors) responsible for the observed variables of organizational effectiveness. There are five major types of extraction methods which follow the common factor model. They are:

1. principal component analysis, Hotelling (1933).
2. the least square method, whose variants include principal axis factoring with iterated communalities (Harman, 1976).
4. image analysis of Guttman (1953) and Harris (1962).
5. the maximum likelihood method (Lawley and Maxwell, 1971), whose variants are canonical factoring; its procedure is based on maximizing the determinants of the residual partial correlation matrix (Kim and Mueller, 1978b)
4.2.2. Principal components, eigenvalues and eigenvectors

This is a method of deriving a small number of linear combinations - principal components - of a set of variables that retain as much information as possible from the original data set. It is considered as the most important type of analysis performed by the Factor Procedure in factor analysis.

Following the "SAS User's Guide: Statistics", 1982 edition, a program was written to compute the correlation coefficient of the observed variables and prepared a correlations matrix. The SAS statement for this job is "PROC CORR". The Job Control Language (JCL) for this correlation procedure is shown in Appendix 5. Then, this correlation matrix was factorized using the "PROC FACTOR" statement.

The output includes all eigenvalues and the pattern matrix for eigenvalues greater than one. This procedure was used in this research for clustering the variables to form the dimensions of organizational effectiveness. The factor extraction options used was the iterated principal factor analysis by applying the SAS statement "METHOD=PRINIT, NFACTOR=20". This statement yields 20 common factors. The Job Control Language (JCL) for this work is shown in Appendix 6.

The second step was to apply Varimax Rotation on these 20 common factors starting from the smallest appropriate number, i.e., 7, and then 8, 9, 10, and 11. The results of
these rotations were compared and yield the best factor loading with ten common factors. This is shown in the computer printout (see Table 4.1). The JCL for varimax rotation with 10 common factors is shown in Appendix 7.

Table 4.1 shows the maximum likelihood solution with ten factors. The number of significant variables (questionnaire's item) involved in this ten factors are 46 and are identified in the table as underlined numbers. It can be seen that each of the underlined coefficients are the largest absolute value in its row. The negative signs mean that the scales on those particular items are reversed. Each of these ten factors, which is now called a dimension (of organizational effectiveness) involves the largest number of variables with highest values of loading. Factor 1 (Fact 1), for example, involves variable X99, X100, X101, X102, X103, X104, and X105. Considering these items from the questionnaire this cluster of variables then was labeled: Dimension (D) 1: Organizational Health. Dimension (D) 2 is labeled Organizational Climate includes variables: X58, X59, X61, X62, X64, and X65. Dimension (D) 3 is labeled Student Career Development includes variables: X34, X36, X37, and X38, and so on.

These new clusters of variables which form dimensions of effectiveness in this study, are different from that originally hypothesized according to the Cameron study. This
Table 4.1. Rotated Factor Pattern (O. Omitted, Rotation Method: Varimax)

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<th>FACT4</th>
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<td>17353</td>
<td>30433</td>
<td>-02367</td>
<td>03294</td>
<td>-09321</td>
</tr>
<tr>
<td>X107</td>
<td>-41570</td>
<td>01349</td>
<td>-09330</td>
<td>28495</td>
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<td>10121</td>
<td>41881</td>
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<td>-02123</td>
<td>-05048</td>
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<td>-05530</td>
<td>33346</td>
<td>-01070</td>
<td>-04080</td>
<td>39387</td>
<td>-06120</td>
<td>-07041</td>
<td>-11339</td>
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<tr>
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<td>05350</td>
<td>-04512</td>
<td>24094</td>
<td>-04420</td>
<td>-21402</td>
<td>31356</td>
<td>02214</td>
<td>-08944</td>
<td>00956</td>
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<tr>
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<td>-03785</td>
<td>06626</td>
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<td>-13565</td>
<td>24595</td>
<td>00105</td>
<td>-12145</td>
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<td>X111</td>
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<td>-05188</td>
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<td>11891</td>
<td>22249</td>
<td>06043</td>
<td>15666</td>
<td>-11442</td>
</tr>
<tr>
<td>X112</td>
<td>-57441</td>
<td>19722</td>
<td>01396</td>
<td>09480</td>
<td>-11595</td>
<td>-02180</td>
<td>-08411</td>
<td>12929</td>
<td>-04604</td>
<td>05901</td>
</tr>
</tbody>
</table>

VARIANCE EXPLAINED BY EACH FACTOR

<table>
<thead>
<tr>
<th>FACT1</th>
<th>FACT2</th>
<th>FACT3</th>
<th>FACT4</th>
<th>FACT5</th>
<th>FACT6</th>
<th>FACT7</th>
<th>FACT8</th>
<th>FACT9</th>
<th>FACT10</th>
</tr>
</thead>
</table>

Note: 1.  X1 - X112 = variables or items from the questionnaire.
2. Underline numbers are maximum factor loading of items related to that common factor.
new set of ten dimensions and their corresponding variables, or items on the questionnaire related to each dimension, is shown in Appendix 8.

The last step was to classify the universities with respect to their degree of attainment of these dimensions. This is accomplished by comparing the value of each dimension for each university to the mean value of all the universities. This analysis of variance is done by applying the General Linear Models procedure. The SAS statements applied in this analysis are: "PROC GLM; CLASS G; MODEL D1-D10=G; MEANS G;". The complete program (JCL) utilized is shown in Appendix 9. This program gives the results for independent factors (dimensions): D1, D2, ...., D9, D10; with F-values and PR > F as described by the computer printout shown in Appendix 10. A list of dimensions in descending order of the F-values is given in Table 4.2. This table also shows that there are no significant differences between D5, D6, and D2, because the value of PR > F for these dimensions are 0.3278, 0.4805, and 0.8617 respectively. This is considered too high.

Table 4.3 describes the means of each dimension for each university and the overall means and standard deviations for all universities combined. From this table, we can calculate the differences of these dimensions among the universities with respect to the overall means of the universities. Table 4.4 shows the values of the rounded means of each dimension for each university and the means standard deviation.
Table 4.2. New Dimensions in Descending Order of F-value

<table>
<thead>
<tr>
<th>F-value</th>
<th>D</th>
<th>PR &gt; F</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.22</td>
<td>3</td>
<td>0.0001</td>
</tr>
<tr>
<td>11.81</td>
<td>7</td>
<td>0.0001</td>
</tr>
<tr>
<td>7.85</td>
<td>4</td>
<td>0.0001</td>
</tr>
<tr>
<td>7.23</td>
<td>10</td>
<td>0.0001</td>
</tr>
<tr>
<td>3.08</td>
<td>9</td>
<td>0.0173</td>
</tr>
<tr>
<td>2.98</td>
<td>1</td>
<td>0.0205</td>
</tr>
<tr>
<td>2.69</td>
<td>8</td>
<td>0.0325</td>
</tr>
<tr>
<td>1.17</td>
<td>5</td>
<td>0.3275</td>
</tr>
<tr>
<td>0.87</td>
<td>6</td>
<td>0.4805</td>
</tr>
<tr>
<td>0.32</td>
<td>2</td>
<td>0.8617</td>
</tr>
</tbody>
</table>

From table 4.4 the performance of each university as compared to the others regarding each of these ten dimensions of effectiveness can be calculated using the following formula:

\[(D_{ni} - M_n)/R.M_n'\]

where: \(D_n\) = dimension-\(n\), \(n = 1, 2, \ldots, 10\)

\(i\) = the university,

\(M\) = dimension means for all universities,

\(R.M\) = dimension means standard deviation.
Table 4.3. Means of Dimensions for each University

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>N</td>
<td>D1</td>
<td>D2</td>
<td>D3</td>
<td>D4</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>I</td>
<td>24</td>
<td>5.08333333</td>
<td>484.041667</td>
<td>303.708333</td>
<td>171.333333</td>
</tr>
<tr>
<td>K</td>
<td>49</td>
<td>0.55102041</td>
<td>491.734694</td>
<td>242.918367</td>
<td>192.489796</td>
</tr>
<tr>
<td>M</td>
<td>26</td>
<td>4.84615385</td>
<td>471.115385</td>
<td>213.269231</td>
<td>260.807692</td>
</tr>
<tr>
<td>P</td>
<td>41</td>
<td>0.73170732</td>
<td>485.585366</td>
<td>280.829268</td>
<td>188.000000</td>
</tr>
<tr>
<td>S</td>
<td>46</td>
<td>2.08695652</td>
<td>471.456522</td>
<td>236.260870</td>
<td>176.043478</td>
</tr>
</tbody>
</table>

<p>| | | | | | |</p>
<table>
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<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>N</td>
<td>D5</td>
<td>D6</td>
<td>D7</td>
<td>D8</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>I</td>
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<td>282.750000</td>
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<td>20.2500000</td>
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<td>K</td>
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<td>251.897959</td>
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<td>248.192308</td>
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</tr>
<tr>
<td>P</td>
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<td>251.560976</td>
<td>84.170732</td>
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<td>163.804878</td>
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<td>S</td>
<td>46</td>
<td>219.717391</td>
<td>88.239130</td>
<td>15.5217391</td>
<td>146.152174</td>
</tr>
</tbody>
</table>

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>N</td>
<td>D9</td>
<td>D10</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
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<td>24</td>
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<td>125.625000</td>
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<tr>
<td>K</td>
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<td>193.795918</td>
<td>187.571429</td>
</tr>
<tr>
<td>M</td>
<td>26</td>
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</tr>
<tr>
<td>P</td>
<td>41</td>
<td>185.487805</td>
<td>184.804878</td>
</tr>
<tr>
<td>S</td>
<td>46</td>
<td>168.543478</td>
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</tbody>
</table>
Table 4.4. Dimension means of each Institute

<table>
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<th>P</th>
<th>S</th>
<th>M_all</th>
<th>R.M.</th>
</tr>
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<tr>
<td>D3</td>
<td>304</td>
<td>243</td>
<td>213</td>
<td>281</td>
<td>236</td>
<td>253</td>
<td>55.82</td>
</tr>
<tr>
<td>D7</td>
<td>20.3</td>
<td>19</td>
<td>13.6</td>
<td>19.6</td>
<td>15.5</td>
<td>17.7</td>
<td>4.68</td>
</tr>
<tr>
<td>D4</td>
<td>171</td>
<td>192</td>
<td>261</td>
<td>188</td>
<td>176</td>
<td>194</td>
<td>67.92</td>
</tr>
<tr>
<td>D10</td>
<td>126</td>
<td>188</td>
<td>162</td>
<td>185</td>
<td>161</td>
<td>169</td>
<td>51.36</td>
</tr>
<tr>
<td>D9</td>
<td>172</td>
<td>194</td>
<td>140</td>
<td>185</td>
<td>169</td>
<td>175</td>
<td>67.83</td>
</tr>
<tr>
<td>D1</td>
<td>5.1</td>
<td>0.6</td>
<td>4.9</td>
<td>0.7</td>
<td>2.1</td>
<td>2.2</td>
<td>7.12</td>
</tr>
<tr>
<td>D8</td>
<td>132</td>
<td>149</td>
<td>127</td>
<td>164</td>
<td>146</td>
<td>146</td>
<td>50.77</td>
</tr>
<tr>
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<td>283</td>
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<td>248</td>
<td>252</td>
<td>220</td>
<td>247</td>
<td>119.87</td>
</tr>
<tr>
<td>D6</td>
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<td>88.7</td>
<td>90.8</td>
<td>84.2</td>
<td>88.2</td>
<td>90.8</td>
<td>47.2</td>
</tr>
<tr>
<td>D2</td>
<td>484</td>
<td>492</td>
<td>471</td>
<td>486</td>
<td>471</td>
<td>481</td>
<td>101.75</td>
</tr>
</tbody>
</table>

The result of these calculations is tabulated in Table 4.5, from which the plots of organizational effectiveness in terms of the seven dimensions with significant differences among the universities can be presented as shown in Figures 4.1 - 4.5.
Table 4.5. Standard Score of Universities

<table>
<thead>
<tr>
<th></th>
<th>I</th>
<th>K</th>
<th>M</th>
<th>P</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>D3</td>
<td>0.91</td>
<td>-0.18</td>
<td>-0.72</td>
<td>0.52</td>
<td>-0.30</td>
</tr>
<tr>
<td>D7</td>
<td>0.56</td>
<td>0.28</td>
<td>-0.88</td>
<td>0.41</td>
<td>-0.47</td>
</tr>
<tr>
<td>D4</td>
<td>-0.34</td>
<td>-0.03</td>
<td>0.99</td>
<td>-0.09</td>
<td>-0.27</td>
</tr>
<tr>
<td>D10</td>
<td>-0.84</td>
<td>0.37</td>
<td>-0.14</td>
<td>0.31</td>
<td>-0.16</td>
</tr>
<tr>
<td>D9</td>
<td>-0.04</td>
<td>0.28</td>
<td>-0.52</td>
<td>0.15</td>
<td>-0.09</td>
</tr>
<tr>
<td>D1</td>
<td>0.41</td>
<td>-0.23</td>
<td>0.38</td>
<td>-0.21</td>
<td>-0.01</td>
</tr>
<tr>
<td>D8</td>
<td>-0.28</td>
<td>0.06</td>
<td>0.37</td>
<td>0.35</td>
<td>0.0</td>
</tr>
<tr>
<td>D5</td>
<td>0.30</td>
<td>0.04</td>
<td>0.00</td>
<td>0.04</td>
<td>-0.23</td>
</tr>
<tr>
<td>D6</td>
<td>0.30</td>
<td>0.04</td>
<td>0.00</td>
<td>-0.14</td>
<td>-0.06</td>
</tr>
<tr>
<td>D2</td>
<td>0.03</td>
<td>0.11</td>
<td>-0.10</td>
<td>0.05</td>
<td>-0.10</td>
</tr>
</tbody>
</table>
FIG. 4.2. U.K.M.
FIG. 4.3. U.M.
Figure 4.4: U.P.M.
FIG. 4.5. U.S.M.
5. ANALYSIS OF THE RESULTS

The results of the computations are interesting. The grouping of the variables into ten dimensions, which are different from Cameron's finding, may have something to do with the value system of Malaysian people and the conditions of the country. The expectations and hopes of Malaysian intellectuals, especially the educators, regarding how to best respond to the challenges they have to face in order to develop their country and nation at a pace consistent with the demand of the modern world, may explain these results. It is important to note that there are no significant differences across the five universities concerning three most important dimensions, i.e., dimension 2 (D2 = Organizational Climate), dimension 6 (D6 = Student Dissatisfaction), and dimension 5 (D5 = Administrative Concerns). As we can see from Appendix 8, all the items or variables related to these dimensions are highly important to the overall success of higher education in Malaysia. These items may be the most important ingredients for success in increasing the rate of development of the country. The results of this study indicate that all staff members from all universities valued these important variables equally highly. This may explain why the rate of progress of the higher educational systems in Malaysia is
one of the highest in Southeast Asia.

As early as the 1970s, the Malaysian higher educational system depended considerably on the supply of staff members from Indonesia. The number of Malaysian students sent to study in different universities in Indonesia was also considerable. Today, the fraction of staff members holding Ph.D. degrees exceeds more than 50%, and in some faculties of U. K. M. (which was only established in 1970) the fraction reached the 80% level. (This statement is based on a private conversation between the author and the deputy vice-chancellor of academic affairs of U. K. M. on May 30, 1984).

From the means of the variables related to these three dimensions, we may understand the reasons for this success.

Dimension 2 suggests that the consituencies from all universities strongly agree - 80/99 scale - with the importance of these items. This analysis cannot detect any differences between the dominant constituencies of one university and the dominant constituencies of the other universities.

Dimension 6 includes items concerning student dissatisfaction and complaints. The results suggest that we can conclude there is no significant differences among the consituencies regarding these items. They all deny - 30/99 scale - the existence of student dissatisfaction.

Dimension 5 includes items related to the Administrative Concerns regarding the internal and external
factors in management. The result also shows that constituencies from all universities put the same degree of emphasis - 42/99 scale, where 1 = A very high degree of emphasis, and 99 = no emphasis - regarding the items.

Those three dimensions are not included in Figures 4.1 - 4.5, because they are not significant in explaining a difference in level of performance among all universities.

The other seven dimensions indicate a variety of perceptions of the dominant constituencies from one university to the other. By observing the figures one can compare the perceptions of each university with respect to the others in their effort to achieve organizational effectiveness. Line 0 is the dimension means of all universities. Observing Figure 4.2. U. K. M., for example, one can see that the dominant constituencies of this university have greatest concern with D7 (Leadership Style), D8 (Resource Availability), D9 (System Openness and Community Interaction), and D10 (Professional Development and Quality of Faculty). All these dimensions are above the mean value. D1 (Organizational Health), D3 (Student Career Development), and D4 (Ability to Attract Resources) are slightly below the mean value. This may suggest that the dominant constituencies of this university have had more confidence in these dimensions as the other universities have that they tended to take them for granted.

Observing Table 4.2 one can see that the largest
significant difference in F-value is in Dimension 3, Student Career Development, which includes items X34, X36, X37, and X38 of the questionnaire. Comparing Figure 4.1 to 4.5, we can see that I. T. M. (Institute of Technology of MARA) has the highest score for this dimension and the U. M. (University of Malaya) has the lowest one. This fact explains that I. T. M. has put the highest degree of emphasis on student career development, which is consistent with the primary objective of this institute being a semi-professional school. This institution was established primarily in order to supply the nation with "ready for the job" graduates. It was only in 1975 that it was expanded to provide degree programs for its selected alumni. The lowest score of U. M. in this dimension may indicate that as a well-established and the oldest institution of higher learning in Malaysia, this university is concerned more with the intellectual development of the students rather than with career development. This can also be concluded from the fact that it has highest score on Dimension 4 (D4), which includes items indicating its ability to attract resources in the form of top level of faculty members and high school graduates (items X6 and X7) and produce top level of academic achievement (item X14).

I. T. M. and U. M. responded not only significantly different on Dimension 7 (D7 = Leadership Style), but they were also diametrically opposite. This may explain their
respective positions in what Cameron called the "spectrum of continuum" of educational management system. It is interesting to note that all newly established institutes, with the exception of U. S. M. (University of Science of Malaysia), have an above average score on D7 (involving: X84, X87, X88, and X89), which may be interpreted to mean that they have more tightly coupled subunits than U. M. The U. S. M. is different in this case, which may be because of the matrix management system it utilized.

It is also interesting to note that U. K. M. (The National University of Malaysia) has a highest score on Dimension 10 (D10 = Professional Development and Quality of Faculty). This university was established in May, 1970, thirteen years after the independence of Malaysia, and the first university to introduce and apply national (Malaysian) language as the medium of instruction. This finding is consistent with the national concerns for the rapid development of the native people. It is also consistent with the score of this university on Dimension 9 (D9 = System Openness and Community Interaction), which shows its frequent involvements in various community and national programs (see items 22, 25, 27, 28, and 29), while U. M. seems to be less open.

U. P. M. has almost the same score on D9, D10, and D1 (Organizational Health) with U. K. M.

Dimension 8 (D8 = Resource Availability) is scored by
all university above average, with the exception of I. T. M.
It is interesting to note that U. M. and U. P. M. on this
dimension have the same score. U. P. M. has the capacity to
produce agricultural product from its experimental farm for
the community consumption.
6. DISCUSSION AND CONCLUSION

High scholarly writing is typical of the current literature on organizational effectiveness. However, very little agreement has been reached concerning the definition and method of assessing organizational effectiveness, let alone how to improve it. Managers, industrial engineers, and most practitioners facing day-to-day managerial problems, such as planning, staffing, leading, controlling, and decision making tend to ignore the debates about the correct definition of and proper approach to measuring effectiveness. This situation has created a gap between researchers and theorists on the one side and practitioners on the other. However, both sides consider this matter as one of the major problems in management science and practice. Drucker (1983) said:

"What is the major problem? It is fundamentally the confusion between effectiveness and efficiency that stands between doing the right things and doing things right. There is surely nothing quite so useless as doing with great efficiency what should not be done at all. Yet our tools - especially our accounting concepts and data - all focus on efficiency." (p. 65)

The problem of assessing organizational effectiveness might be analogous to the problem of assessing satisfaction as first explained by Herzberg in his theory of motivation. Herzberg suggested two separate set of factors were needed to explain employee satisfaction and dissatisfaction. He
suggests that factors which are responsible for eliminating dissatisfaction, i.e., security, adequate payment, and supervision, will not also create satisfaction. These factors can only decrease or eliminate dissatisfaction. Satisfaction, on the other hand, is influenced by another set of factors, which are achievement, growth opportunity, responsibility, a challenged job assignment, and recognition. This last set of factors will increase one's satisfaction and increase motivation when part of one's job assignment.

Analogically, there may be two separate set of factors controlling organizational effectiveness and ineffectiveness. Most managers are concerned only with how to reduce those factors that cause organizational ineffectiveness in order that their organizations may survive. They tend to ignore the theorists' concern with factors enhancing organizational effectiveness, probably because they cannot afford the luxury of debating something which seemed to be unrelated to their difficult day-to-day efforts to be minimally effective for survival. Most theorists and researchers, however are concerned with those factors or dimensions which are involved in maximizing the organizational level of effectiveness. Therefore, the domain of concern of both groups seems to be different.

This study of Malaysian institutes of higher education has been based on the assumption that they have reached a
relatively high level of organizational effectiveness. This study has made an attempt to identify those factors believed to be significant in influencing organizational effectiveness within each university as well as the larger Malaysian system of higher education. The author was interested in testing a method for identifying those factors responsible for these admirable achievements in effectiveness, and to compare the utilization of these factors between one institute to the other. The nine dimensions of organizational effectiveness assumed by Cameron were covered by the distributed questionnaire. The questionnaire consisted of 112 variables, and the responses were factor analyzed. The result of this factor analysis in our case was ten dimensions with only 46 highly correlated variables. The rest of the variables, based upon this study of the dominant constituencies, do not seem to be relevant to the measurement of the organizational effectiveness in Malaysian universities.

Statistically, those variables excluded from the ten dimensions can be considered as single factors or errors of observation. Factually, this can be interpreted as an indication that there was very little or no perceptual agreements among the members of the dominant constituencies about the role of these items or variables toward increasing or decreasing the organizational effectiveness of institutions of higher education in Malaysia. The 46
involving variables seemed to be the most important ingredients in achieving such a high organizational effectiveness in the Malaysian universities.

The difference in seven out of the ten dimensions from one university and another suggests there are differences in perceptions about the preferred managerial performance and approach for achieving organizational effectiveness. This means that each university is implementing each of these seven dimensions of organizational effectiveness in a way that is relevant to the institution's background and mission.

There was no significant difference in the three other dimensions (D2 = Organizational Climate, D5 = Administrative Concerns, and D6 = Student Dissatisfaction), which may mean that all universities have regarded these three dimensions equally highly and have performed them equally well.

In conclusion, the instrument used in this study is a viable one for measuring indices of organizational effectiveness within institutes of higher education due to the fact that the sample in this case were the dominant constituencies. Further study is needed to test the viability of the instrument when applied with other constituencies.

The author hopes that this finding will help in stimulating the respective universities to compete with each other toward higher levels of achievement in organizational
effectiveness. He also hopes that the instrument to assess organizational effectiveness in universities with certain modification can be used in different places, particularly in the third world countries. An understanding of the situation and conditions as well as the tradition and culture of a certain place might be needed to modify the instrument to suit the specifications of the place before it could be applied.

One of the indispensable conditions that must be available for the applicability of this instrument is an academic freedom of expression. In a country where this condition is not available a researcher cannot expect a non-bias response. The author could feel from his field experience in performing this research, that the dominant constituencies of Malaysian universities were enjoying this privilege of academic freedom fully so that he could be sure that the responses he obtained were honest and unbiased.
7. BIBLIOGRAPHY


8. ACKNOWLEDGEMENTS

I would like to express my sincere gratitude to Dr. C. E. Smith, my academic advisor, for his personal assistance, guidance and motivation. Without his persistent encouragement, this research would have never been accomplished. My sincere appreciation is also extended to the members of my committee, especially the chairman Dr. H. A. Cowles, whose didactic approach never failed to motivate me to complete this study, and Dr. H. T. David, Dr. G. Montag, and Dr. A. A. Read. A special word of appreciation goes to Dr. L. Wolins who has helped me in applied statistics and interpretation of the results.

My entire study would have been impossible without the generous grant from the King Faisal Foundation of Saudi Arabia. I acknowledge this grant with deep gratitude and prayer (du'a): "May Allah, Most Gracious, Most Merciful, bestow upon His most honored and beloved servant, the late King Faisal, one of the best places near His side (maqaaman mahmudan) in the Hereafter."

I appreciated highly the hospitality and sincere help of Malaysian high ranking officials, especially H. E. Anwar Ibrahim, Minister of Agriculture, and family, and his entire staff, without which it would have been impossible for me to penetrate the necessary red tape. All vice-chancellors and
deputy vice-chancellors of the five universities including their staff, deans and department heads who have been eager to assist me in any way possible, deserve my sincere salutes and appreciations.

My special words of gratitude are for my beloved wife, Siti Amanah, for her sincere sacrifices to single-handedly taking good care of our three lovable daughters, Nurkhalishah, Sakinah, and Rahimah, during their most tender years, when we were facing the most severe turbulent in our life, which led to our leaving our country and engaging in this study program. I cannot imagine what our life would be like considering the ordeal we have gone through, without her steadfastness and courage. Her sincere love based on her constant awareness and faith in the mercy of God Almighty has always been my inspiration during the completion of this study program.
9. APPENDIX 1
Ames, April 16, 1984

Dr. Kim S. Cameron
N. C. H. E. M. S.
P. O. Drawer P.
Boulder, Colorado  80302

Dear Dr. Cameron,

I cannot tell you how happy I was when you told me just now, in our phone conversation, that you are willing to give me permission to use your model of measuring organizational effectiveness in my similar research for universities in Malaysia.

I am sending you this letter of request, as you have advised, hoping to get your official permission as soon as possible. I am planning to leave for Malaysia to do the research after the second week of May.

I will appreciate it highly if you also can spare some of your precious time to talk with me before I leave. If you can, I will stop over at your place on my way heading west. Would you please tell me the most convenient date and time for you to see me between May, 12th and 19th?

Thank you very much for your kindness and cooperation.

Sincerely,

Muhammad I. Abdulrahim
3117 Lincoln Way
Ames, Iowa 50010
phone (515) 292 5406
10. APPENDIX 2
April 18, 1984

Muhammad I. Abdulrahim
3117 Lincoln Way
Ames, Iowa 50010

Dear Muhammad:

Thank you for your letter regarding your project to measure effectiveness in Malaysian universities. This letter grants formal permission to use the instruments or models that I have developed to assess organizational effectiveness in colleges and universities, and it grants permission to alter the questions in ways that you deem appropriate so that they fit your particular context. I would very much like to learn about your findings when you conduct the research, so please keep me informed as your progress with your work.

As it turns out, the week of 14-18 May is the only one I have free in the month of May, so I would be glad to spend some time talking with you before you return to Malaysia. I will be in the office trying to get a project underway during that week, so you may just want to call me when it is convenient. We can spend whatever time you need. In the meantime, I am enclosing a listing of some publications that relate to effectiveness in colleges and universities. If there are any of them that you would like copies of, you can bring the list with you and I'll get them for you.

Good luck in your research.

Sincerely,

Kim Cameron
Director
Organizational Studies
11. APPENDIX 3
Yang Terhormat
Ketua Pengarah
Unit Penyelidikan Socio Ekonomi
Jabatan Perdana Menteri
Wisma Mirama
KUALA LUMPUR, M A L A Y S I A

Re: Izin Penyelidikan

Assalamu'alaikum warahmatuLLahi wabarakatuh.

Ketua Pengarah yang dihormati,

Dengan hormat, izinkanlah saya memperkenalkan diri sebagai Muhammad I. Abdulrahim, mahasiswa dari Indonesia, yang sedang menuntut di- Iowa State University, Ames, Iowa, didalam bidang Industrial Engineering.

Masalah yang menjadi perhatian saya didalam bidang tersebut ialah bagaimana mengukur daya-guna (effectiveness) suatu institute yang tidak mencari laba (non-profit organization) seperti university dan sebagainya, terutama dinegeri-negeri yang sedang laju berkembang. Berdasarkan berbagai pertimbangan saya dan major Professor saya, Dr. C. E. Smith, telah memilih unibersiti-unibersiti dan lembaga perguruan tinggi di Malaysia menjadi case study.


Atas kesudian dan bantuan Tuan Ketua Pengarah memenuhi permohonan ini saya mengucapkan terima kasih dan penghormatan yang setinggi-tingginya.

Wassalam,

M. I. Abdulrahim
3117 Lincoln way
Ames, Iowa 50010
U. S. A.
12. APPENDIX 4
March 23, 1984

Director General
Socio Economic Research Unit (SERU)
Prime Minister Department
Wisma Mirama
Kuala Lumpur, Malaysia

Re: Mr. Muhammad I. Abdulrahim

Greetings:

This letter is a request to grant permission to Mr. Abdulrahim to gather data during a research effort in Malaysia. He is interested in studying those factors which affect organizational effectiveness in institutions of higher education. He would like to begin his research by May 15, 1984.

His research is concerned with the utilization of human resources in achieving organizational effectiveness and he is not concerned with a study of political factors.

Your permission and support is requested. This research is the basis for Mr. Abdulrahim's Ph.D. dissertation.

Sincerely,

Clifford E. Smith
Professor

CES:jv
13. APPENDIX 5. Job Control Language (JCL) for Correlation Procedure (PROC CORR)

//MIA JOB I3674, ABDULRAHIM

/*JOBPARM LINES=20
//S1 EXEC SAS, OPTIONS='LS=80', REGION=400K
//OUTDD1 DD DSN=M.I3674.SASDATA, UNIT=DISK, DISP=(NEW, CATLG),
// SPACE=(TRK, (1, 1), RLSE)
//SYSIN DD *
DATA UKPMISM;
INPUT N INS $ X1-X130;
CARDS;
.
PROC CORR NOPROB NOMISS OUT=OUTDD1.UMCORMAT;
.
   VAR X1-X112;
PROC PRINT DATA=UKPMISM;
   VAR N--X112;
//
14. APPENDIX 6. Job Control Language (JCL) for Factor Analysis

//MIA JOB I3674, ABDULRAHIM
//*JOBPARM LINES=20
//S1 EXEC SAS,OPTIONS='LS=80',REGION=800K,TIME=3
//INDD1 DD DSN=M.I3674.SASDATA,UNIT=DISK,DISP=SHR
//OUT3 DD DISP=(NEW,CATLG),DSN=M.I3674.COMFACT1,UNIT=DISK,
// SPACE=(TRK,(1,120),RLSE)
//SYSIN DD *
PROC FACTOR DATA=INDD1.UMCORMAT(TYPE=CORR)
   OUT=OUT3.COMFACT1
   METHOD=PRINIT NFACTORS=20;
   VAR X1-X112;
PROC PRINT;
//
15. APPENDIX 7. JCL VARIMAX Rotation

//MIA JOB I3674, ABDULRAHIM
/*JOBPARM LINES=20
//S1 EXEC SAS, TIME=3, REGION=800K
//IN DD DSN=M.I3674.COMFACT1, DISP=OLD, UNIT=DISK
//SYSIN DD *
DATA ROTATE1; SET IN.COMFACT1;
IF _NAME_='FACTOR11' THEN DELETE;
IF _NAME_='FACTOR12' THEN DELETE;
IF _NAME_='FACTOR13' THEN DELETE;
IF _NAME_='FACTOR14' THEN DELETE;
IF _NAME_='FACTOR15' THEN DELETE;
IF _NAME_='FACTOR16' THEN DELETE;
IF _NAME_='FACTOR17' THEN DELETE;
IF _NAME_='FACTOR18' THEN DELETE;
IF _NAME_='FACTOR19' THEN DELETE;
IF _NAME_='FACTOR20' THEN DELETE;
PROC FACTOR DATA=ROTATE1(TYPE=FACTOR)
   ROTATE = VARIMAX;
//

Dimension (D) 1. Organizational Health

99. The general social environment.
100. The flexibility of the administration.
101. General level of trust among people here.
102. Conflict and friction in this institute.
103. Resolution of disagreements or conflicts.
104. Use of the talents and expertise of faculty members and administrators.
105. Organizational health of the institute.
106. Long term planning and goal setting.

Dimension (D) 2. Organizational Climate

_____ 58. It is important to have students develop and progress academically.
_____ 59. It is important to have students become trained and progress toward an occupation and career.
_____ 61. It is important to have faculty members and administrators satisfied with their employment.
_____ 62. It is important to have high quality and professionally developing faculty members.
_____ 64. It is important for this university to have the ability to acquire resources for the university (e.g., good students, faculty, financial support, etc.)
_____ 65. It is important to have productive and satisfying
internal process and practice in the university.

Dimension (D) 3. Student Career Development

34. Almost all students who graduated from this university last year and entered the labor market have obtained employment in their major field of study.

36. The majority of the undergraduate courses offered at this university are designed to be career oriented or occupation-related as opposed to liberal education, personal development, etc.

37. Almost all students who entered the job market after graduating from this university last year obtained the job of their first choice.

38. The majority of students who have obtained employment after graduating from this university found the career training they received at this institution important in helping them obtain their job.

Dimension (D) 4. Ability to Attract Resources

6. When hiring new faculty members, this university attracts the leading people in the country in their respective fields.

7. This university attracts the best high school graduates in the country.
14. With regard to the academic level of achievement, last year's graduating class at this university, was the very top university graduating classes in the country.

50. Universities may be rated on the basis of their relative "drawing power" in attracting top high school students. In relation to other universities with which it directly competes, the majority of the top students attend this university rather than the competition.

Dimension (D) 5. Administrative Concerns

Emphasis on:

Internal Factors:

76. Finances and budgeting
77. Academics and scholarship
78. Legal matters
79. Students affairs.

External Factors:

80. Fund raising
81. Public service

Dimension (D) 6. Student Dissatisfaction

11. Dissatisfaction is high among students in general at this university.

12. There has been a large number of students either
drop out or not return because of dissatisfaction with their educational experiences.

13. A large number of students complain regarding their educational experience at this university.

Dimension (D) 7. Leadership Style

84. Controls internal processes
87. Acts
88. Unilaterally direct
89. Reactive

Dimension (D) 8. Resource Availability

53. Opportunities for professional development
54. Opportunities for community involvement
56. Grants and "outside" support

Dimension (D) 9. System Openness and Community Interaction

22. Professional activities outside the regular university assignments are provided by faculty members and/or administrators.
25. A great number (over 75%) of faculty members and administrators at this university serve the community or government, on boards or committees, as consultants, or in other capacities. (Combine federal, state, and local levels)
27. Last year the university sponsored an adequate
number of such community programs (refer to question 26).

28. It is very important that each department of this university sponsors community program which involves only that department.

29. Last year each department sponsored an adequate number of such community programs (refer to question 28).

Dimension (D) 10. Professional Development and Quality of Faculty

46. The majority of the faculty members at this university published a book or an article in a professional journal, or displayed a work of art in a show last year.

47. More than half of the faculty members teach at the "cutting edge" of their field - i.e., require current journal articles as reading, revise syllabi at least yearly, discuss current issues in the field, etc.

49. The majority of the faculty members at this university are actively engaged now in professional development activities - e.g., doing research, getting an advanced degree, etc.
17. APPENDIX 9
9. JCL for G. L. M. Procedure

//MIA JOB I3674, ABDULRAHIM
/*JOBPARM LINES=20
//S1 EXEC SAS, OPTIONS='LS=80', REGION=800K, TIME=3
//INDD1 DD DSN=M.I3674.COMPDATA, UNIT=DISK, DISP=SHR
//OUT3 DD DISP=(NEW, CATLG), DSN=M.I3674.MEANDIM, UNIT=DISK,
// SPACE=(TRK, (1, 120), RLSE)
//SYSIN DD *
DATA STANDIM; INFILE INDD1;
INPUT N INS $ X1-X130;
D1=X99+X100-X101-X102+X103+X104+X105;
D2=X57+X58+X61+X62+X64+X65;
D3=X34+X36+X37+X38;
D4=X6+X7+X14+X50;
D5=X76+X77+X78+X79+X80+X81;
D6=X11+X12+X13;
D7=X83+X84+X87+X88+X89;
D8=X53+X54+X56;
D9=X25+X27+X28+X29;
D10=X46+X47+X49;
G=SUBSTR(INS, 1, 1);
PROC GLM;
CLASS G;
MODEL D1-D10=G;
MEANS G;
//
18. APPENDIX 10
10. General Linear Models Procedure: Class Level Information

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NUMBER OF OBSERVATIONS IN DATA SET = 186

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19. APPENDIX 11
Organizational Effectiveness Assessment of Universities in Malaysia.

The following questionnaire is part of a study undertaken at The Industrial Engineering Department of Iowa State University, Ames, Iowa, sponsored by The King Faisal Grant, and approved by SERU (Social and Economic Research Unit), Prime Minister Department of Malaysia, aimed at measuring organizational effectiveness in universities and institutes of high learning in Malaysia.

The entries have been developed to assess your personal perceptions of the undergraduate portion of this university/institute and its activities. You are expected to answer frankly and honestly to the questions. If you are unsure about certain questions, please try to give your best estimate.

I assure you that the responses will remain strictly confidential. The written feedback report, which will be sent later, contains no individual responses, but will summarize and compare results from the other unnamed institutions from this country, which also provide data.

The questionnaire should take not more than 25 minutes to complete. Would you please response to each question, because each one is important for this study. After you have finished, please return the questionnaire to me using the enclosed stamped envelope. I will sincerely appreciate receiving the questionnaire back by June 25th.

If you have questions or comments, I will be very happy to talk with you; please contact me at the address and phone number below.

I sincerely thank you in advance for your help and cooperation in this study program.

Muhd.'Imaduddin Abdulrahim
c/o Drs. M. Kurdi
5814/14 Taman Bangi, Kajang
SELANGOR.
Phone: 331 757
SECTION 1

How positive are you that the following characteristics are typical of the undergraduate portion of this university? Please mark the appropriate response using the scale immediately below.

<table>
<thead>
<tr>
<th>Absolutely Disagree</th>
<th>Unsure</th>
<th>Absolutely agree</th>
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</table>

1. This university has the reputation of possessing a stimulating intellectual environment.
2. This university has the reputation of having high concern for student academic development.
3. One of the outstanding features of this university is the opportunity it provides students for personal development in addition to academic development.
4. This university is highly responsive and adaptive to meeting the changing needs of the external academic community.
5. This university can obtain easily the needed financial resources necessary for a high quality educational program.
6. When hiring new faculty members, this university attracts the leading people in the country in their respective fields.
7. This university attracts the best high school graduates in the country.
8. This university obtains all the resources it needs to be effective.
9. After students graduate, they maintain a strong commitment to this university.
10. At activities or events where alumni are invited by the university to participate, a large showing of support occurs.
11. Dissatisfaction is high among students in general at this university.
12. There has been a large number of students either drop out or not return because of dissatisfaction with their educational experiences.

13. A large number of students complain regarding their educational experience at this university.

14. With regard to the academic level of achievement, last year's graduating class at this university, was the very top university graduating classes in the country.

15. Last year's graduating class at this university was at the average level of academic attainment of university graduating classes in this country.

16. Last year's graduating class at this university was at the bottom level of academic attainment of university graduating classes in this country.

17. A great majority (over 75%) of the graduates from this university go on to obtain degrees in graduate or professional schools.

18. Very few (less than 25%) of the graduates from this university go on to obtain degrees in graduate or professional schools.

19. It is very important for this university to provide students with opportunities for personal and non-academic development (e.g., social, emotional, cultural, religious, etc.)

20. Student activities outside the classroom are designed specifically to enhance students' academic development.

21. Student activities outside the classroom are designed specifically to enhance students' personal non-academic development.

22. Professional activities outside the regular university assignments are provided by faculty members and/or administrators.
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<tbody>
<tr>
<td>23. Student activities outside the classroom are meant to enhance University-community or university-environment relations.</td>
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<td>24. Career development opportunities are frequently provided for students at this university?</td>
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<td>25. A great number (over 75%) of faculty members and administrators at this university serve the community or government, on boards or committees, as consultants, or in other capacities. (Combine federal, state, and local levels)</td>
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<td>26. It is very important that this university sponsors community programs which involve all departments of the university community.</td>
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<td>27. Last year the university sponsored an adequate number of such community programs (refer to question 26).</td>
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<td>28. It is very important that each department of this university sponsors community program which involves only that department.</td>
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<td>29. Last year each department sponsored an adequate number of such community programs (refer to question 28).</td>
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<td>30. Students develop and mature in non-academic areas (e.g., religious, social, emotional, cultural, etc.) as a direct result of their educational experiences at this university?</td>
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<td>31. Almost all faculty members have national reputations in their respective academic fields.</td>
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<td>32. None of our faculty members have national reputations in their respective academic fields.</td>
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<td>33. The majority of students engage in extra academic work (e.g., reading, studying, writing, etc.) over and above what is specifically assigned in the classroom.</td>
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</table>

34. Almost all students who graduated from this university last year and entered the labor market have obtained employment in their major field of study.

35. The majority of students attend this university to fulfill definite career or occupational goals as opposed to attending for social, athletic, financial, or other reasons.

36. The majority of the undergraduate courses offered at this university are designed to be career oriented or occupation-related as opposed to liberal education, personal development, etc.

37. Almost all students who entered the job market after graduating from this university last year obtained the job of their first choice.

38. The majority of students who have obtained employment after graduating from this university found the career training they received at this institution important in helping them obtain their job.

39. If given the chance of taking a similar job at another university of his/her choice, the majority of faculty members would opt for leaving rather than staying.

40. If given the chance of taking a similar job at another school of his/her choice, the majority of administrators would opt for leaving rather than staying.

41. Almost all faculty members at this university are personally satisfied with their employment.

42. Almost none of administrators at this university are personally satisfied with their employment.

43. Almost none of faculty members at this university are personally satisfied with the way things are accomplished around this university.
44. Almost all administrators at this university are personally satisfied with the way things are accomplished around this university.

45. The majority of the faculty members and administrators at this university attended a conference or workshop specifically oriented toward professional and/or personal development last year.

46. The majority of the faculty members at this university published a book or an article in a professional journal, or displayed a work of art in a show last year.

47. More than half of the faculty members teach at the "cutting edge" of their field - i.e., require current journal articles as reading, revise syllabi at least yearly, discuss current issues in the field, etc.

48. None of the faculty members at this university have received an academic award or honor such as a teaching, research, or professional award or a listing in a national honorary directory.

49. The majority of the faculty members at this university are actively engaged now in professional development activities - e.g., doing research, getting an advanced degree, etc.

50. Universities may be rated on the basis of their relative "drawing power" in attracting top high school students. In relation to other universities with which it directly competes, the majority of the top students attend this university rather than the competition.
SECTION 2

UNIVERSITY ENVIRONMENTS CAN BE RATED ACCORDING TO THEIR "RICHNESS" OR "LEANNESS". PLEASE GIVE YOUR RATING OF THE FOLLOWING RESOURCES IN THIS UNIVERSITY'S ENVIRONMENT IN TERMS OF WHETHER THERE IS MORE THAN ENOUGH OF THE RESOURCES OR NOT ENOUGH OF THE RESOURCES PRESENT IN THE ENVIRONMENT.

Not nearly enough (lean)  About right  More than is needed (rich)

1  10  20  30  40  50  60  70  80  90  99

51. Prospective students
52. Prospective faculty members
53. Opportunities for professional development
54. Opportunities for community involvement
55. Jobs for students
56. Grants and "outside" support

SECTION 3.

PLEASE RATE THE RELATIVE IMPORTANCE YOU BELIEVE THIS UNIVERSITY PLACES ON EACH OF THE FOLLOWING FACTORS. PLEASE USE THE FOLLOWING SCALE FOR THE RATINGS.

Absolutely Disagree  Unsure  Absolutely agree

1  10  20  30  40  50  60  70  80  90  99

57. It is extremely important to have students satisfied with their educational experiences.
58. It is important to have students develop and progress academically.
59. It is important to have students become trained and progress toward an occupation and career.
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<th>Unsure</th>
<th>Absolutely agree</th>
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</table>

60. It is not important to have students develop in personal, non-academic areas (e.g., socially, religiously, emotionally, etc.).

61. It is important to have faculty members and administrators satisfied with their employment.

62. It is important to have high quality and professionally developing faculty members.

63. It is not important to have productive university-community or university-environment relations.

64. It is important for this university to have the ability to acquire resources for the university (e.g., good students, faculty, financial support, etc.)

65. It is important to have productive and satisfying internal process and practices in the university.

66. My ratings of the importance of the above factors is the same as the "official institutional position". (please remark the appropriate response).
SECTION 4

PLEASE INDICATE TO WHAT EXTEND YOU BELIEVE THE FOLLOWING STATEMENTS ARE TYPICAL OF THE ORGANIZATIONAL STRUCTURE OF THIS UNIVERSITY. PLEASE USE THE SCALE BELOW FOR YOUR RATINGS.

Absolutely Unsure Absolutely agree
Disagree | | | | | | | | | | | 1 10 20 30 40 50 60 70 80 90 99

67. All major decisions are made by top administrators and handed down by decree.

68. Joint faculty/administrator/student committees either don't exist or they have no power to affect policy and procedures.

69. Each department always conducts its own independent search and hiring procedures for new faculty members.

70. Each department always institutes new courses without having them approved through a central university committee.

71. There are university wide policies governing hours worked, absences, required assignments, and so forth for faculty members and administrators.

72. Standardized evaluation procedures are used regularly to determine salary and promotion.

73. Faculty members can totally determine the content and reading materials for their own courses.

74. Most people view this university as having a special mission or role to perform.

75. There is a general sense that this university possess a unique identity.
SECTION 5

USING THE SCALE BELOW, WHAT DO YOU BELIEVE THE RELATIVE EMPHASIS GIVEN BY THE VICE CHANCELLOR TO EACH OF THE FOLLOWING UNIVERSITY RELATED FACTORS.

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<th>Moderate emphasis</th>
<th>No emphasis</th>
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</tbody>
</table>

INTERNAL FACTORS:

____ 76. Finances and budgeting
____ 77. Academics and scholarship
____ 78. Legal matters
____ 79. Students affairs.

EXTERNAL FACTORS:

____ 80. Fund raising
____ 81. Public service
____ 82. Politics and public relations.
SECTION 6

PLEASE DESCRIBE YOUR PERCEPTION OF THE VICE CHANCELLOR OF THIS UNIVERSITY AS OBJECTIVELY AND AS ACCURATELY AS YOU CAN ACCORDING TO THE SCALES BELOW.

83. Influential outside constituencies
1 2 3 4 5 6 7 Impotent with outside constituencies

84. Controls internal processes
1 2 3 4 5 6 7 Unable to control internal processes

85. Conservative, stable
1 2 3 4 5 6 7 Progressive, innovative

86. Controlled by outside outside influences
1 2 3 4 5 6 7 Autonomous from outside influences

87. Acts
1 2 3 4 5 6 7 Contemplate

88. Unilaterally direct
1 2 3 4 5 6 7 Consult others

89. Reactive
1 2 3 4 5 6 7 Proactive

90. Far-sighted, future oriented
1 2 3 4 5 6 7 Short-sighted, now oriented

91. Does the Vice Chancellor of this university give more emphasis to internal (inside the university) affairs or to external (outside the university) affairs? Please circle the appropriate number.

Exclusively emphasizes internal affairs
1 2 3 4 5 6 7 Exclusively emphasizes external affairs
SECTION 7

THIS SECTION ASKS YOU TO RATE YOUR PERCEPTIONS OF THE GENERAL DAY-TO-DAY FUNCTIONING OF THE UNDERGRADUATE PORTION OF THE OVERALL INSTITUTION. PLEASE RESPOND BY CIRCLING THE NUMBER THAT BEST REPRESENTS YOUR PERCEPTIONS OF EACH ITEM. IF YOU AGREE STRONGLY WITH ONE END OF THE SCALE, CIRCLE A NUMBER CLOSER TO THAT END OF THE SCALE. IF YOU FEEL NEUTRAL ABOUT THE ITEM, CIRCLE A NUMBER NEAR THE MIDDLE OF THE SCALE.

FOR EXAMPLE:

How is the weather in this town? In case of Kuala Lumpur you might circle (1).

warm, bright, and sunny (1) cold, wet, and dismal

HOW DO YOU PERCEIVE THE FOLLOWING?

92. Student/faculty relationships.

unusual closeness, 1 2 3 4 5 6 7 no closeness, mostly instrumental relations, little informal interaction
lots of informal interaction, mutual personal concern

93. Interdepartmental relations in the university.

lots of coordination, 1 2 3 4 5 6 7 no joint activity, conflict, lack of coordination and communication
joint planning, collaboration, no friction

94. General pattern of supervision and control.

rigid control, 1 2 3 4 5 6 7 respect for differences, personal freedom, individual autonomy
strict supervision, pressure for conformity
95. Equity of treatment and rewards.

people treated fairly and rewarded equitably
favoritism and inequity present, unfair treatment exists

96. Recognition and rewards received for good work from superiors.

recognition received for good works, rewarded for success
no rewards for good works, no one recognizes success

97. The amount of information or feedback you receive.

feel informed, in-the-know, information is always available
feel isolated, out-of-it, information is never available

98. Type of communication that is typical.

guarded, screened, cautious, formal
open, authentic, personal, free

99. The general social environment.

cooperative, supportive, mutual concern for others, humane
competitive, no support, unsympathetic, "everyone for himself"

100. The flexibility of the administration.

willing to change, adaptable, progressive, flexible
rigid, unwilling to change, stagnant, unyielding

101. General level of trust among people here.

high suspicion, fear, distrust, insecurity
high trust, security, openness
102. Conflict and friction in this institute.

| large amount of conflicts, disagreement, anxiety, friction | 1 2 3 4 5 6 7 | no friction or conflict, friendly, collaborative |

103. Resolution of disagreements or conflicts.

| imposition, avoidance, dictum, suppression, bad feelings result | 1 2 3 4 5 6 7 | face-to-face, compromise, democratically, positive feelings result |

104. Use of the talents and expertise of faculty members and administrators.

| competencies and talents used maximally, chances for fulfillment and development are present | 1 2 3 4 5 6 7 | competencies not used, no opportunities for growth, talents unused |

105. Organizational health of the institute.

| institute runs smoothly, healthy organization, productive internal functioning | 1 2 3 4 5 6 7 | institute runs poorly, unhealthy organization, unproductive internal functioning |

106. Long term planning and goal setting.

| much goal directed activity, long term planning, continuous assessments | 1 2 3 4 5 6 7 | no goal directed activity, no planning, no goal assessments |
SECTION 8

PLEASE GIVE YOUR RATING OF THE EXTERNAL ENVIRONMENT OR MILIEU OF THIS UNIVERSITY ON THE FOLLOWING SCALES, BY CIRCLING THE APPROPRIATE NUMBER.

107. Imposes regulations 1 2 3 4 5 6 7 Allows autonomy

108. Controlling, dominating 1 2 3 4 5 6 7 Unobtrusive, unimposing

109. Turbulent, changing 1 2 3 4 5 6 7 Stable, peaceful

110. Unpredictable 1 2 3 4 5 6 7 Predictable

111. Accepting 1 2 3 4 5 6 7 Rejecting

112. Hostile 1 2 3 4 5 6 7 Cooperative, supportive

SECTION 9

yes no

113. Does the union/association representing the teaching faculty also include other occupational groups in this university? (e.g., non-teaching faculty, staff, administrators, etc.)

114. Is there a faculty senate at this university in addition to the faculty union?

115. Is the faculty union on this campus a part of a large bargaining unit representing other universities/institutions?

116. What kind of a relationship exists between the union and the faculty senate? (Please circle the appropriate number on the scale below.)

Cooperation and mutual support 1 2 3 4 5 6 7 Competition, conflict, and undermining

117. What percent of the teaching faculty at this university are dues-paying members of the faculty union?
HOW HAVE THE FOLLOWING FACTORS CHANGED SINCE UNIONIZATION OCCURRED AT THIS UNIVERSITY?

<table>
<thead>
<tr>
<th></th>
<th>Markedly increased</th>
<th>Markedly decreased</th>
</tr>
</thead>
<tbody>
<tr>
<td>118. Faculty power</td>
<td>7 6 5 4 3</td>
<td>2 1</td>
</tr>
<tr>
<td>119. Collegiality among faculty members</td>
<td>7 6 5 4 3</td>
<td>2 1</td>
</tr>
<tr>
<td>120. Collegiality between faculty members and administrators</td>
<td>7 6 5 4 3</td>
<td>2 1</td>
</tr>
<tr>
<td>121. Complexity of procedures or &quot;red tape&quot;</td>
<td>7 6 5 4 3</td>
<td>2 1</td>
</tr>
</tbody>
</table>

HOW SUCCESSFUL HAS THE FACULTY UNION BEEN IN HAVING IMPACT ON THE FOLLOWING FACTORS?

<table>
<thead>
<tr>
<th></th>
<th>No impact</th>
<th>High impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>122. Wages</td>
<td>1 2 3 4 5</td>
<td>6 7</td>
</tr>
<tr>
<td>123. Tenure</td>
<td>1 2 3 4 5</td>
<td>6 7</td>
</tr>
<tr>
<td>124. Governances</td>
<td>1 2 3 4 5</td>
<td>6 7</td>
</tr>
<tr>
<td>125. Grievances</td>
<td>1 2 3 4 5</td>
<td>6 7</td>
</tr>
<tr>
<td>126. Fringe benefits</td>
<td>1 2 3 4 5</td>
<td>6 7</td>
</tr>
</tbody>
</table>
Please give your general comment as your degree of satisfaction or dissatisfaction with your career at this university on the space below.

THANK YOU VERY MUCH FOR YOUR SINCERE PARTICIPATION.
PERSONAL DATA SECTION

These questions are optional.

1. Sex

________ Male

________ Female

2. Age

____ Under 20
____ 20 - 29
____ 30 - 39
____ 40 - 49
____ 50 - 59
____ 60 or older

3. Education

____ Some college
____ Bachelors degree
____ Fifth or Sixth year certificate
____ Master degree
____ Doctorate

4. Length of employment at this university/institute

____ Less than one year
____ 1 - 2 years
____ 3 - 5 years
____ 6 - 10 years
____ 11 - 15 years
____ 16 - 20 years
____ 21 - 30 years
____ Over 30 years

THANK YOU AGAIN.