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Organizational effectiveness of universities in Malaysia

Muhammad 'Imaduddin 'Abdulrahim
Iowa State University

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ORGANIZATIONAL EFFECTIVENESS OF UNIVERSITIES IN MALAYSIA

Iowa State University   PH.D.   1985

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Organizational effectiveness of universities in Malaysia

by

Muhammad 'Imaduddin 'Abdulrahim

A Dissertation Submitted to the

Graduate Faculty in Partial Fulfillment of the

Requirements for the Degree of

DOCTOR OF PHILOSOPHY

Department: Industrial Engineering

Major   : Engineering Valuation

Approved:

In Charge of Major Work

For the Major Department

For the Graduate College

Iowa State University
Ames, Iowa

1985

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1. INTRODUCTION[1]

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

in NAS, 1983, p. iii).

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.

2. REVIEW OF LITERATURE

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 world wide, 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.

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 extend 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.

Table 2.1.   Model Used to Define and Assess Organizational
             Effectiveness

Model	Definition	When Useful
	An Organization is Effective to the extent that...	
Goal Model	it accomplishes its stated goals.	Goals are clear, consensual, measurable.
System-Resource Model	it requires needed resource.	Clear connection between inputs and outputs.
Internal Process Model	it has an absence of internal strain, smooth internal functioning.	Clear connection between processes and primary task.
Strategic-Constituencies Model	all strategic constituencies are at least minimally satisfied.	Constituencies have powerful influence;the organization reacts.

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 Mediterranian 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 institutes
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 proceeding 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 selfprotective 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
   myoptic 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 extend of academic attainment,
   growth, and progress of students at the institution.

2. Student Career Development comprised of criteria
   indicating the extend 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. <u>Ability to Acquire Resources</u> 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. <u>System Openness and Community Interaction</u> 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. <u>Organizational Health</u> 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 untill 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. <u>Exploratory factor analysis</u>: 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. <u>Confirmatory factor analysis</u>: 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:

$$X_1 - \mu_1 = l_{11} F_1 + l_{12} F_2 + \cdots + l_{1m} F_m + \epsilon_1$$

$$X_2 - \mu_2 = l_{21} F_1 + l_{22} F_2 + \cdots + l_{1m} F_m + \epsilon_2$$

$$\vdots$$

$$X_n - \mu_n = l_{n1} F_1 + l_{n2} F_2 + \cdots + l_{nm} F_m + \epsilon_n$$

or, in matrix form,

$$X - \mu = L \quad F + \epsilon$$

The (n x 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 ϵ_i is the error or specific factor. In many investigations, as found by Maxwell, the ϵ_i's tend to be combinations of measurement error and factors that are uniquely associated with the individual variables, thereby called unique factors. μ_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, ... X_n with so many unobservable quantity of factors is almost impossible. However, by additional assumptions about the random vectors F and ϵ, the above model implies certain covariance relationships, which can be checked.

The additional assumptions are:

$$E(F) = 0, \quad Cov(F) = E[FF'] = I$$

$$E(\epsilon) = 0, \quad Cov(\epsilon) = E[\epsilon\epsilon'] = \Psi = \begin{vmatrix} \psi_1 & 0 & \cdots & 0 \\ 0 & \psi_2 & \cdots & 0 \\ \cdot & \cdot & \cdot & \cdot & \cdot \\ 0 & \cdot & \cdot & \cdot & 0 \\ 0 & \cdot & \cdot & \cdot & \psi_n \end{vmatrix}$$

F and ϵ are independent, that is:

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

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

$$\Sigma = Cov(X) = E(X - \mu)(X - \mu)'$$
$$= LE(FF')L' + E(\epsilon F')L' + L E(F\epsilon') + E(\epsilon\epsilon')$$
$$= LL' + \psi$$

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

so that

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

(Johnson, and Wichern, 1982, pp. 402-404).

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. <u>Extraction of initial factors</u>   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).

3. alpha factoring of Kaiser and Caffrey (1965).

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. <u>Principal components, eigenvalues and</u>

<u>eigenvectors</u>   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 statment "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 (questionnair'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 questionnair this cluster of variables then was labled: Dimension (D) 1: Organizational Health. Dimension (D) 2 is labled Organizational Climate includes variables: X58, X59, X61, X62, X64, and X65. Dimension (D) 3 is labled 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 (0. Ommitted, Rotation Method : Varimax)

N	FACT1	FACT2	FACT3	FACT4	FACT5	FACT6	FACT7	FACT8	FACT9	FACT10
X1	-34727	22627	28189	45090	-01267	-12239	00028	23175	14810	25585
X2	-41771	25967	31819	34160	-08495	-21197	-01736	11809	04571	24910
X3	-19528	17081	29092	23900	-07820	-13319	-00998	13964	26317	30530
X4	-31890	09918	36959	17471	01814	-12758	00125	30409	28545	21045
X5	-06505	13830	21986	-01218	-01291	-04357	-10118	35229	22892	-11618
X6	-25173	04764	13446	57378	04010	-17981	-09916	22789	14866	18648
X7	-14874	11592	09452	68931	-02188	-13134	-17021	07442	11034	17437
X8	-20391	10227	34059	28482	-06288	-07044	-05784	31597	17785	02396
X9	-05805	06689	48459	18812	-11007	-11200	-06010	02242	10123	22796
X10	-01790	01030	43480	19828	-13360	-02084	04706	-06398	18833	18520
X11	16239	-10931	-28728	-15589	-06913	41293	-12043	-01104	-09698	13568
X12	12122	01274	-12862	-00628	03545	63268	-02248	-03752	04019	-07663
X13	19670	-07487	-15220	-19553	02326	51202	-14970	-10179	-01099	-14668
X14	-07514	04726	24786	53932	02200	-11375	-16264	02927	-00278	04716
X15	-05079	15357	-06512	-39669	00439	01976	-04048	-00306	19853	-02834
X16	12668	-13904	09076	-14754	04283	30548	06420	03431	-06584	08652
X17	01284	11353	35458	25809	10715	20575	17015	32767	08287	14400
X18	02418	-04236	-24912	-17432	-18810	-05459	-22036	-31591	-05679	-06985
X19	00600	10191	-02390	02873	-13603	-38193	-14294	05719	-18909	13895
X20	04033	19557	15534	17874	-08500	12712	05625	26796	08868	08425
X21	-03978	12772	21006	-01158	-08407	-30481	-04639	-06527	06779	-03088
X22	-02936	08030	36880	04727	-08717	-13490	06293	-04643	43435	03670
X23	-04758	04848	14592	01317	-37132	-18597	05694	05281	29656	21294
X24	-17546	06241	54843	05651	-21614	-11436	06566	08949	16184	11706
X25	-11314	08424	10923	11027	-15771	-04377	10737	14517	62074	07827
X26	06836	04682	-18081	-07187	-20061	-23970	-07657	05697	20588	04543
X27	-12851	12883	17805	04999	-01952	-05875	-00142	16540	55509	10389
X28	06883	11308	12655	-02282	11232	21120	-06352	13661	43646	-05221
X29	-11234	06527	06837	07945	03057	11763	-05780	18410	59872	04024
X30	-15333	05753	25852	01684	-00499	-02607	04241	23821	17260	31452

Table 4.1 Continued

N	FACT1	FACT2	FACT3	FACT4	FACT5	FACT6	FACT7	FACT8	FACT9	FACT10
X31	-06726	02632	15297	35214	05834	05043	08552	16245	34022	36307
X32	07647	-00831	-02649	-21601	08633	32059	06271	-14795	-10806	-27884
X33	-23290	25806	36237	27997	-11558	19119	-02085	09376	16143	11874
X34	-05386	03671	57317	-04764	-01660	03935	-02394	27144	-04966	00532
X35	-11096	03062	13995	05300	05857	-27973	-09025	10299	-08281	09444
X36	-16809	01196	42614	-17670	01338	-19588	02353	00669	20005	-17736
X37	-09400	06054	64859	06221	08711	04164	03831	29416	-05654	-09311
X38	-20033	16427	67113	01937	-11095	-11906	07146	09830	12054	-10806
X39	39968	-05391	03462	-20873	-05916	46943	14423	-05355	10478	-01028
X40	35621	-10075	-11481	-12254	-06224	34051	21211	08582	11796	10748
X41	-33476	13354	11432	20205	10256	-16776	01038	24646	02843	07003
X42	22351	-23726	-09721	04271	07209	38152	09907	-00133	00992	08165
X43	36172	-14494	17942	-03234	03134	37910	01460	-31072	-00939	-03422
X44	-07772	-01083	32779	02017	04635	-09791	-07635	-04616	07482	12794
X45	-32222	02663	15808	-01524	-03644	04928	19912	19909	11275	31971
X46	-31351	-00122	-08546	05082	-00918	-24622	00887	06494	25375	47295
X47	-15987	14793	20313	29463	-12274	-21123	03600	02209	19485	42200
X48	20095	-08924	15428	-07371	15979	37541	-04798	12964	-20544	-02642
X49	-37360	15105	10445	-04495	-02284	-26694	08168	10293	12216	51146
X50	-08145	10693	-04057	59125	01238	01501	-10791	05949	03308	18181
X51	04601	14171	10547	37709	-00624	-17391	-04365	19275	-03145	-13544
X52	-02933	13321	03997	34824	08179	-03371	15864	44635	16620	14964
X53	-22525	27465	06007	21690	-13902	-09406	11809	65671	04090	08991
X54	-09240	04768	07060	-00131	-16726	-13444	-00102	57532	26008	03764
X55	-00033	05964	46920	07173	00376	15345	-12059	35714	-06019	-15736
X56	00661	-04076	16299	-01890	02766	-04606	-04757	61359	05366	03623
X57	-13440	65209	08487	02277	-05311	-07393	00255	05507	13653	04858
X58	-21126	79252	08025	03520	-11774	-03011	02892	09076	-02144	05311
X59	-20451	48610	30936	04810	-10455	06793	06398	08636	14013	-11950
X60	10040	-31951	-12118	20376	12400	21764	-00672	07025	-11837	-00186

Table 4.1 Continued

N	FACT1	FACT2	FACT3	FACT4	FACT5	FACT6	FACT7	FACT8	FACT9	FACT10
X61	-14579	**83934**	08644	05678	-07182	-07322	03164	12591	09630	01999
X62	-20275	**82467**	13548	20771	-08118	-09249	06136	13194	08764	08426
X63	05559	-21805	-04351	-02906	03725	24977	02370	-05131	-21572	02064
X64	-08157	**73698**	03213	16044	-16009	-22699	-04471	01863	01944	09546
X65	-12042	**79892**	-01122	04278	-11198	-18522	-04376	12646	03171	04008
X66	-14460	26869	-03228	02703	-05428	-25837	09580	25878	19069	20405
X67	37028	03974	-01429	-07040	-01861	19380	-14975	-13960	-19762	04734
X68	46127	00350	-03807	-19743	18819	24705	-08698	-18801	-24356	-02853
X69	08119	05100	04605	06344	-06662	07251	14920	-04553	-05216	38750
X70	12677	-05053	-05253	21899	24172	31837	-07715	-11377	02984	26836
X71	-06148	06744	16850	-05214	-20615	-06915	-06102	-05153	10715	10225
X72	-31429	13742	11802	09387	-12316	-02882	09296	37817	13471	-00694
X73	-08086	-02819	-05396	11730	-04658	06184	-13126	03856	-11430	25252
X74	-25568	21623	31599	16621	-11501	-17703	01866	13501	-20467	22304
X75	-24769	21800	30345	26329	-14879	-18411	04178	09421	-15532	19038
X76	13539	-01049	-15210	11320	**75162**	-01105	05322	-08108	10783	-07325
X77	20624	-21780	-13079	-08711	**70054**	-04620	-00824	-05320	21061	-09855
X78	12713	-07765	-07039	-08063	**65355**	-06583	12667	-08968	-01486	05924
X79	21014	-11012	-07753	07504	**74180**	-00507	13270	00468	06797	-01566
X80	-02082	-12943	11165	-19735	**59566**	08096	-02410	-02828	-15534	01867
X81	10149	-16014	03880	-11685	**73141**	19228	01315	-02599	-08016	02983
X82	-00501	-01093	00113	09220	44691	15492	20237	10266	-21564	-12682
X83	17709	-08431	02951	-42140	09276	-03570	**55507**	04588	-09683	17437
X84	16112	-00869	03379	-11047	10874	16613	**64746**	01174	08083	04765
X85	-16721	06948	-00910	35100	-11165	-11205	-10686	-10434	09674	-07124
X86	-31576	02208	-01540	44636	-07454	05198	17732	05620	14140	-02038
X87	09261	03565	-03150	-10911	11926	01584	**71746**	05909	-06530	07561
X88	-31617	03124	12361	03297	-02743	-01284	**46054**	-05498	01698	17537
X89	04088	02998	-03377	-04636	03836	02469	**58627**	01857	03116	-07853
X90	36479	-08115	00519	-39887	23514	00853	**55489**	-00413	02670	-00499

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Table 4.1 Continued

N	FACT1	FACT2	FACT3	FACT4	FACT5	FACT6	FACT7	FACT8	FACT9	FACT10
X91	21276	-09885	04948	12203	07543	07795	04201	-17484	-00565	-00687
X92	45184	-01300	-06145	07234	-03882	-08977	09554	02090	-13452	-13133
X93	49798	-17389	-28027	-04294	07964	11320	11283	07872	-23419	04773
X94	-35600	03186	-00358	18278	-17626	-00716	20752	-03547	-01636	18448
X95	57496	-06657	-18489	-16054	12901	11366	07614	-12053	-21444	06781
X96	57697	-02106	-13937	-12338	04415	19588	06169	-14896	03152	03027
X97	49484	-00756	-13753	02901	21115	11105	20950	14296	-16535	-21378
X98	-48393	18765	01371	15361	-15722	-11900	19158	-11157	-02816	-07401
X99	62673	-16904	-11755	20270	01540	-08332	16286	08252	-14350	-14498
X100	72205	-14195	-08677	06235	06114	13136	-00112	-14061	-05711	-14550
X101	-60570	05854	15022	00815	02488	-00284	-06599	11299	-00215	07166
X102	-65626	04415	10345	09547	04749	-20898	09250	05154	09821	-09882
X103	-66788	13527	21458	05618	-04021	-13313	-00157	-00090	20253	-10237
X104	64979	-20871	-10066	-04469	14031	09815	06322	-16806	00077	-17344
X105	62866	-12788	-06753	-04771	23036	09594	19243	-05872	-02900	-12922
X106	53760	-14721	-18505	-19092	22973	17353	30433	-02367	03294	-09321
X107	-41570	01349	-09330	28495	05485	10121	41881	00040	-02123	-05048
X108	-55554	02095	-05530	33346	-01070	-04080	39387	-06120	-07041	-11339
X109	-49507	05350	-04512	24094	-04420	-21402	31356	02214	-08944	00956
X110	-53621	-03785	-06626	28292	-16149	-13565	24595	00105	-12145	-00341
X111	51900	-08757	-05188	-08091	07706	11891	22249	06043	15666	-11442
X112	-57441	19722	01396	09480	-11595	-02180	-08411	12929	-04604	05901

VARIANCE EXPLAINED BY EACH FACTOR

FACT1	FACT2	FACT3	FACT4	FACT5	FACT6	FACT7	FACT8	FACT9	FACT10
10.041	5.423	5.013	4.902	4.422	3.951	3.714	3.572	3.433	2.771

Note: 1. X1 - X112 = variables or items from the questionnaire.
2. Underline numbers are maximum factor loading of items related to that common factor.

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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 re-
spect 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 rouded means of each dimension
for each university and the means standard deviation.

Table 4.2. New Dimensions in Descending Order of F-value

F-value	D	PR > F
12.22	3	0.0001
11.81	7	0.0001
7.85	4	0.0001
7.23	10	0.0001
3.08	9	0.0173
2.98	1	0.0205
2.69	8	0.0325
1.17	5	0.3275
0.87	6	0.4805
0.32	2	0.8617

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, ...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

G	N	D1	D2	D3	D4
I	24	5.08333333	484.041667	303.708333	171.333333
K	49	0.55102041	491.734694	242.918367	192.489796
M	26	4.84615385	471.115385	213.269231	260.807692
P	41	0.73170732	485.585366	280.829268	188.000000
S	46	2.08695652	471.456522	236.260870	176.043478

G	N	D5	D6	D7	D8
I	24	282.750000	104.583333	20.2500000	131.875000
K	49	251.897959	88.714286	18.9591837	149.489796
M	26	248.192308	96.769231	13.6153846	126.961538
P	41	251.560976	84.170732	19.6097561	163.804878
S	46	219.717391	88.239130	15.5217391	146.152174

G	N	D9	D10
I	24	171.541667	125.625000
K	49	193.795918	187.571429
M	26	139.500000	162.307692
P	41	185.487805	184.804878
S	46	168.543478	161.217391

Table 4.4. Dimension means of each Institute

	I	K	M	P	S	M_{all}	R.M.
D3	304	243	213	281	236	253	55.82
D7	20.3	19	13.6	19.6	15.5	17.7	4.68
D4	171	192	261	188	176	194	67.92
D10	126	188	162	185	161	169	51.36
D9	172	194	140	185	169	175	67.83
D1	5.1	0.6	4.9	0.7	2.1	2.2	7.12
D8	132	149	127	164	146	146	50.77
D5	283	252	248	252	220	247	119.87
D6	105	88.7	90.8	84.2	88.2	90.8	47.2
D2	484	492	471	486	471	481	101.75

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

	I	K	M	P	S
D3	0.91	-0.18	-0.72	0.52	-0.30
D7	0.56	0.28	-0.88	0.41	-0.47
D4	-0.34	-0.03	0.99	-0.09	-0.27
D10	-0.84	0.37	-0.14	0.31	-0.16
D9	-0.04	0.28	-0.52	0.15	-0.09
D1	0.41	-0.23	0.38	-0.21	-0.01
D8	-0.28	0.06	0.37	0.35	0.0
D5	0.30	0.04	0.00	0.04	-0.23
D6	0.30	0.04	0.00	-0.14	-0.06
D2	0.03	0.11	-0.10	0.05	-0.10
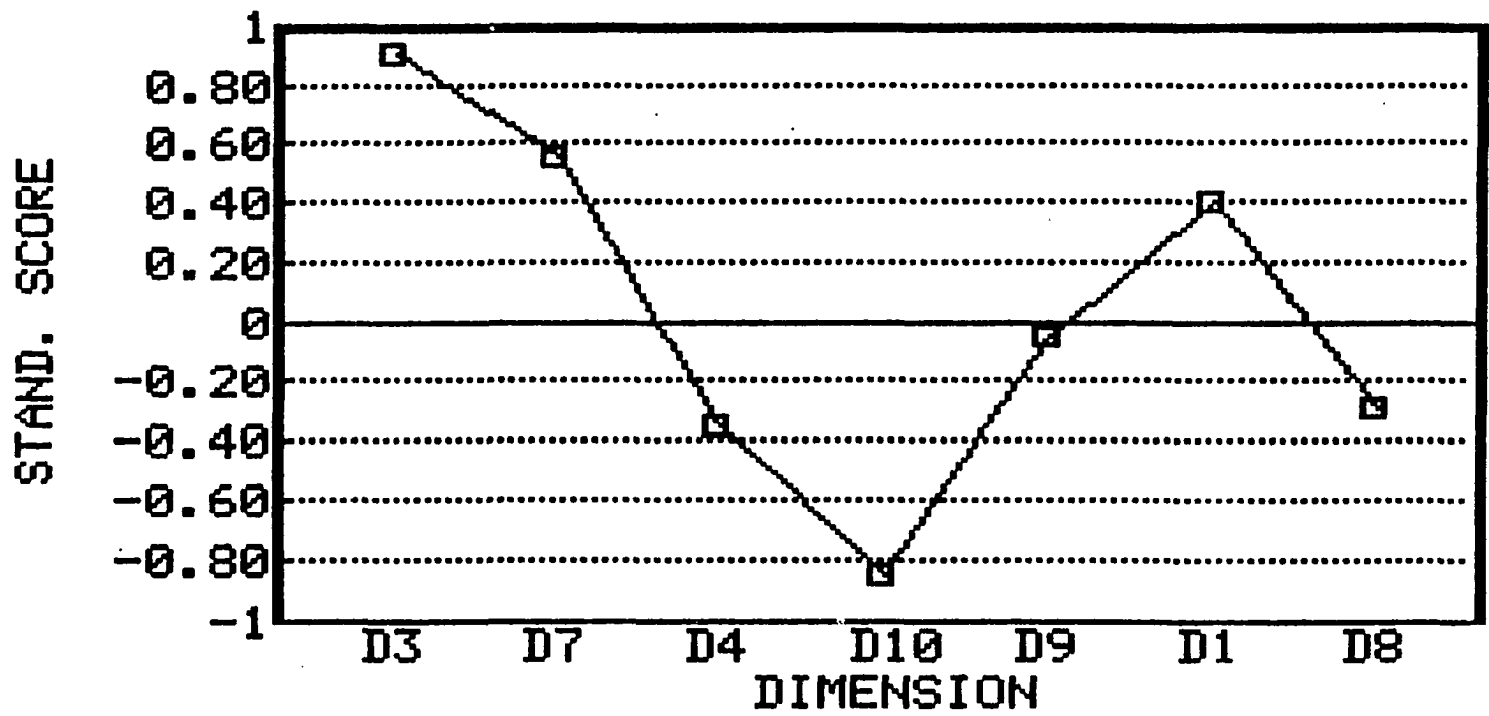
FIG.4.1. I.T.M.

FIG.4.2. U.K.M.

FIG.4.3. U.M.

FIG.4.4. U.P.M.

FIG.4.5. U.S.M.

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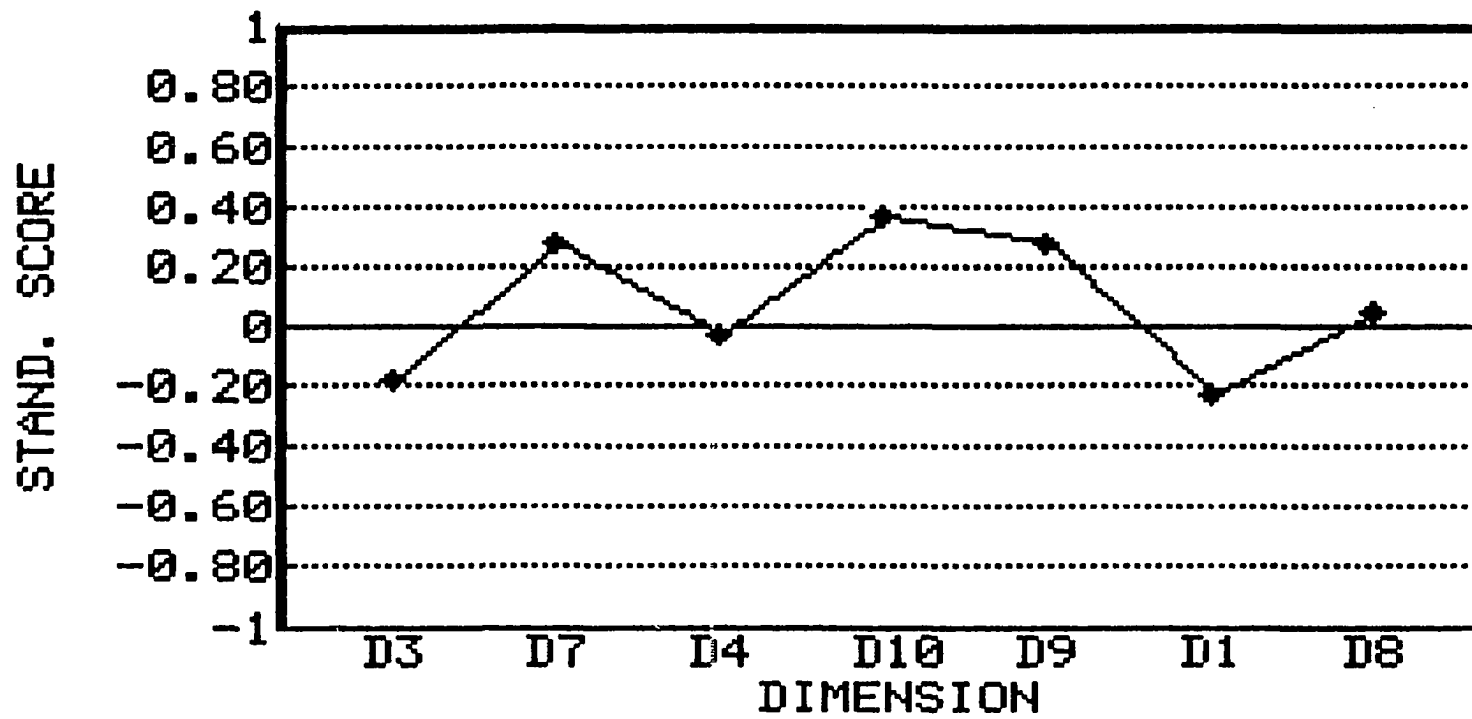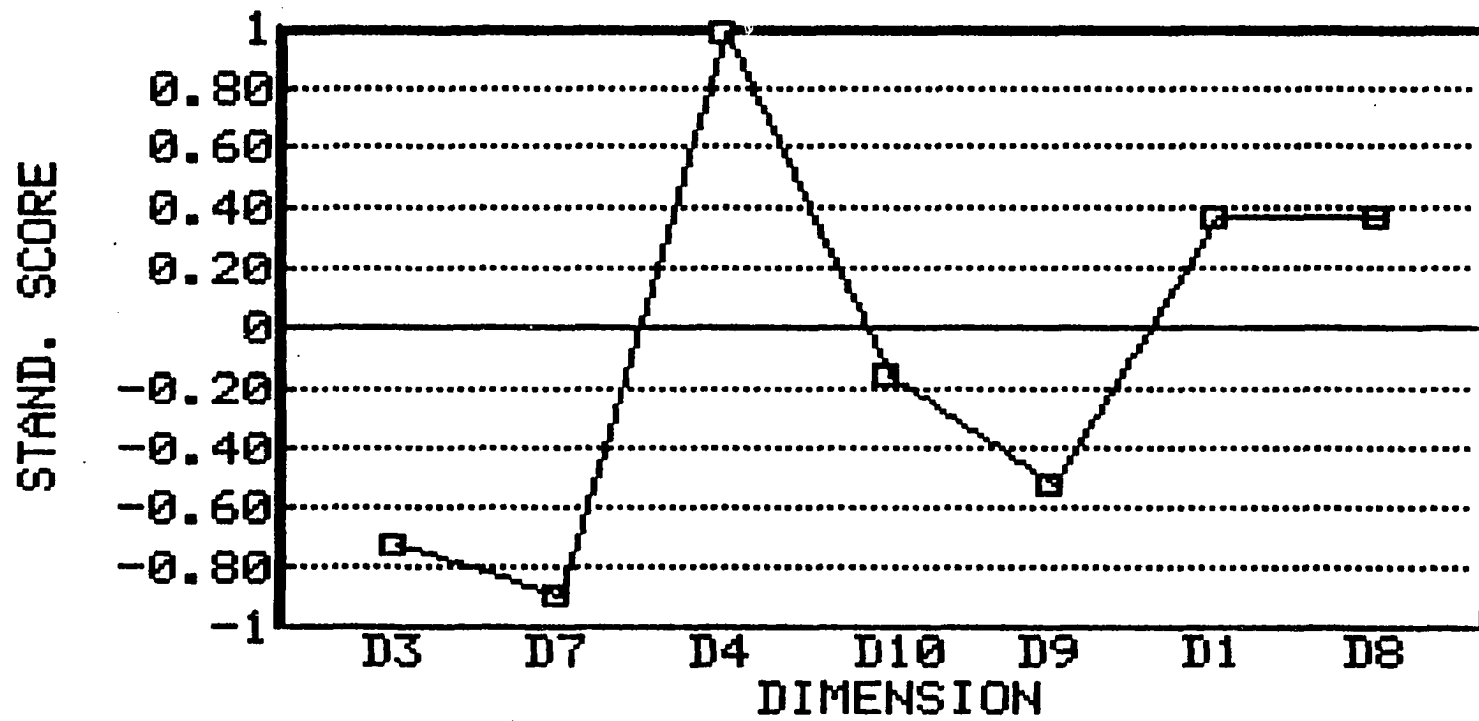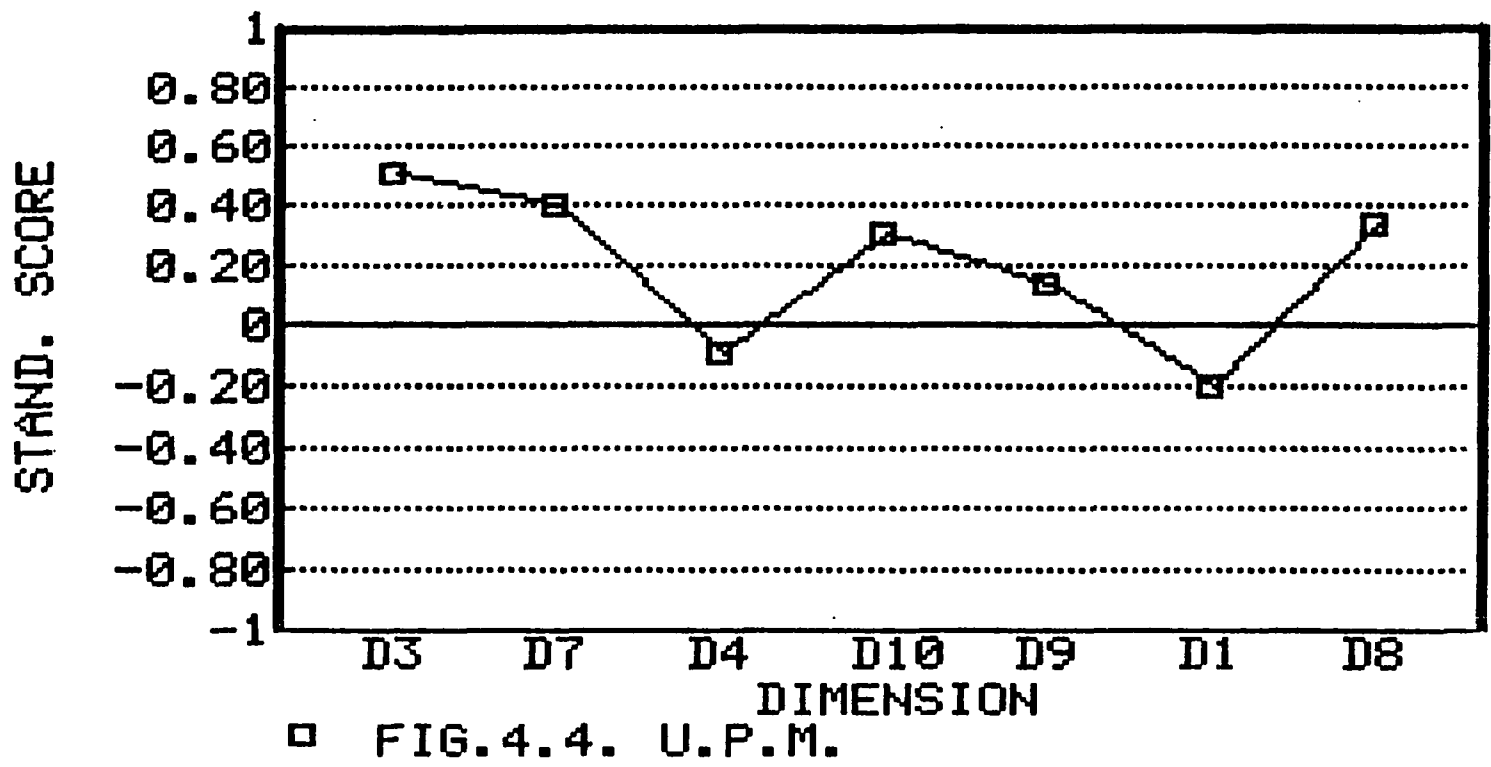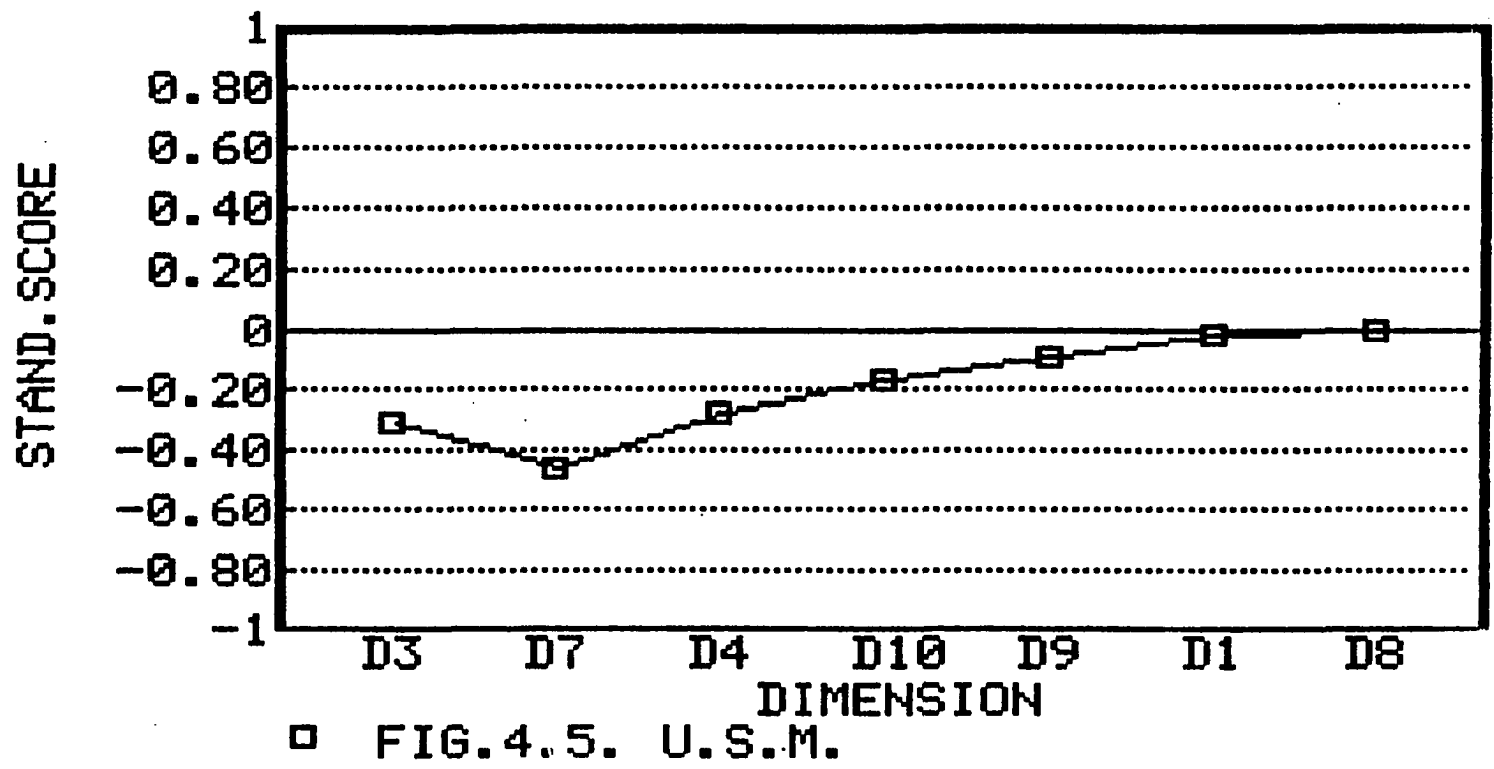
5. ANALYSIS OF THE RESULTS

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 Malysian 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 Availibility), 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 intitution 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 perceptional 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.

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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

NCHEMS

National Center for Higher Education Management Systems
P.O. Drawer P/Boulder, Colorado 80302/(303) 447-1980
An Affirmative Action/Equal Opportunity Employer

18 April 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

Ames, 23 March, 1984

Yang Terhormat
Ketua Pengarah
Unit Penyelidikan Socio Economi
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.

    Oleh karena itu saya mohon dengan hormatnya akan kesudian
Tuan Ketua Pengarah memberikan izin kepada saya untuk
mengadakan penyelidikan, temu duga dan lain-lain yang
diperlukan di-unibersiti-unibersiti dan perguruan tinggi
yang ada di Malaysia ini. Penyelidikan ini akan saya mulai
insya Allah pada bulan May, 1984 yang akan datang ini.

    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

Iowa State University *of Science and Technology*   *Ames, Iowa 50011*

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 (PROCCORR)

```
//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;
//
```

16. APPENDIX 8. New Ten Dimensions

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 practices 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 Availibility

_____53. Opportunities for professional development

_____54. Opportunities for community involvement

_____56. Grants and "outside" support

Dimension (D) 9. System Opennes 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

CLASS	LEVELS	VALUES
G	5	I K M P S

NUMBER OF OBSERVATIONS IN DATA SET = 186

DEPENDENT VARIABLE: D1

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	4	603.43714253	150.85928563	2.98
ERROR	181	9165.04135210	50.63558758	PR > F
CORRECTED TOTAL	185	9768.47849462		0.0205

R-SQUARE	C.V.	ROOT MSE	D1 MEAN
0.061774	330.0627	7.11586872	2.15591398

SOURCE	DF	TYPE I SS	F VALUE	PR > F
G	4	603.43714253	2.98	0.0205

SOURCE	DF	TYPE III SS	F VALUE	PR > F
G	4	603.43714253	2.98	0.0205

DEPENDENT VARIABLE: D2

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	4	13415.95103174	3353.98775793	0.32
ERROR	181	1873996.52746289	10353.57197493	PR > F
CORRECTED TOTAL	185	1887412.47849463		0.8617

R-SQUARE	C.V.	ROOT MSE	D2 MEAN
0.007108	21.1329	101.75250353	481.48924731

SOURCE	DF	TYPE I SS	F VALUE	PR > F
G	4	13415.95103174	0.32	0.8617

SOURCE	DF	TYPE III SS	F VALUE	PR > F
G	4	13415.95103174	0.32	0.8617

DEPENDENT VARIABLE: D3

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	4	152356.57299305	38089.14324826	12.22
ERROR	181	563952.42163060	3115.75923553	PR > F
CORRECTED TOTAL	185	716308.99462366		0.0001

R-SQUARE	C.V.	ROOT MSE	D3 MEAN
0.212697	22.0343	55.81898634	253.32795699

SOURCE	DF	TYPE I SS	F VALUE	PR > F
G	4	152356.57299305	12.22	0.0001

SOURCE	DF	TYPE III SS	F VALUE	PR > F
G	4	152356.57299305	12.22	0.0001

DEPENDENT VARIABLE: D4

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	4	144783.59391960	36195.89847990	7.85
ERROR	181	834957.52973631	4613.02502617	PR > F
CORRECTED TOTAL	185	979741.12365591		0.0001

R-SQUARE	C.V.	ROOT MSE	D4 MEAN
0.147777	34.9644	67.91925372	194.25268817

SOURCE	DF	TYPE I SS	F VALUE	PR > F
G	4	144783.59391960	7.85	0.0001

SOURCE	DF	TYPE III SS	F VALUE	PR > F
G	4	144783.59391960	7.85	0.0001

DEPENDENT VARIABLE: D5

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	4	66958.54271827	16739.63567957	1.17
ERROR	181	2600728.45190539	14368.66548014	PR > F
CORRECTED TOTAL	185	2667686.99462366		0.3278

R-SQUARE	C.V.	ROOT MSE	D5 MEAN
0.025100	48.4658	119.86936840	247.32795699

SOURCE	DF	TYPE I SS	F VALUE	PR > F
G	4	66958.54271827	1.17	0.3278

SOURCE	DF	TYPE III SS	F VALUE	PR > F
G	4	66958.54271827	1.17	0.3278

DEPENDENT VARIABLE: D6

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	4	7802.43597857	1950.60899464	0.87
ERROR	181	403798.62316122	2230.93161968	PR > F
CORRECTED TOTAL	185	411601.05913979		0.4805

R-SQUARE	C.V.	ROOT MSE	D6 MEAN
0.018956	52.0363	47.23273885	90.76881720

SOURCE	DF	TYPE I SS	F VALUE	PR > F
G	4	7802.43597857	0.87	0.4805

SOURCE	DF	TYPE III SS	F VALUE	PR > F
G	4	7802.43597857	0.87	0.4805

DEPENDENT VARIABLE: D7

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	4	1035.18805172	258.79701293	11.81
ERROR	181	3967.80657193	21.92158327	PR > F
CORRECTED TOTAL	185	5002.99462366		0.0001

R-SQUARE	C.V.	ROOT MSE	D7 MEAN
0.206914	26.4941	4.68204905	17.67204301

SOURCE	DF	TYPE I SS	F VALUE	PR > F
G	4	1035.18805172	11.81	0.0001

SOURCE	DF	TYPE III SS	F VALUE	PR > F
G	4	1035.18805172	11.81	0.0001

DEPENDENT VARIABLE: D8

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	4	27778.35389637	6944.58847409	2.69
ERROR	181	466570.20524342	2577.73594057	PR > F
CORRECTED TOTAL	185	494348.55913979		0.0325

R-SQUARE	C.V.	ROOT MSE	D8 MEAN
0.056192	34.6804	50.77140869	146.39784946

SOURCE	DF	TYPE I SS	F VALUE	PR > F
G	4	27778.35389637	2.69	0.0325

SOURCE	DF	TYPE III SS	F VALUE	PR > F
G	4	27778.35389637	2.69	0.0325

DEPENDENT VARIABLE: D9

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	4	56779.53844030	14194.88461008	3.08
ERROR	181	832840.07446292	4601.32637825	PR > F
CORRECTED TOTAL	185	889619.61290323		0.0173

R-SQUARE	C.V.	ROOT MSE	D9 MEAN
0.063825	38.7047	67.83307732	175.25806452

SOURCE	DF	TYPE I SS	F VALUE	PR > F
G	4	56779.53844030	3.08	0.0173

SOURCE	DF	TYPE III SS	F VALUE	PR > F
G	4	56779.53844030	3.08	0.0173

DEPENDENT VARIABLE: D10

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	4	76244.36174970	19061.09043742	7.23
ERROR	181	477417.42857289	2637.66535123	PR > F
CORRECTED TOTAL	185	553661.79032258		0.0001

R-SQUARE	C.V.	ROOT MSE	D10 MEAN
0.137709	30.4040	51.35820627	168.91935484

SOURCE	DF	TYPE I SS	F VALUE	PR > F
G	4	76244.36174970	7.23	0.0001

SOURCE	DF	TYPE III SS	F VALUE	PR > F
G	4	76244.36174970	7.23	0.0001

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

```
Absolutely                     Unsure                   Absolutely
Disagree                                                   agree
|    |    |    |    |    |    |    |    |    |    |
1    10   20   30   40   50   60   70   80   90   99
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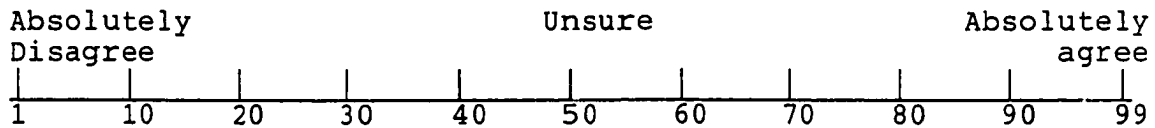
_____1. This university has the reputation of possessing a stimulating intellectual environment.

_____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.

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

_____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 .

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

_____23. Student activities outside the classroom are meant to enhance University-community or university-environment relations.

_____24. Career development opportunities are frequently provided for students at this university?

_____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)

_____26. It is very important that this university sponsors community programs which involve all departments of the university community.

_____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).

_____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?

_____31. Almost all faculty members have national reputations in their respective academic fields.

_____32. None of our faculty members have national reputations in their respective academic fields.

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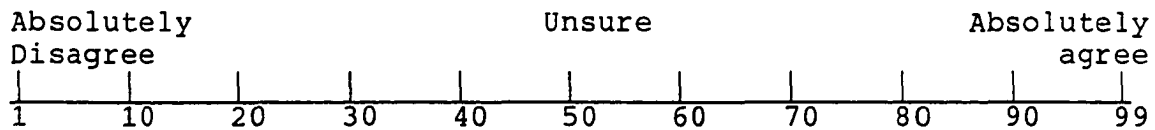
```
Absolutely                        Unsure                    Absolutely
Disagree                                                       agree
|    |    |    |    |    |    |    |    |    |    |    |
1    10   20   30   40   50   60   70   80   90   99
```

_____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.

```
Absolutely                      Unsure                  Absolutely
Disagree                                                   agree
|     |      |     |     |     |     |     |     |     |     |
1    10    20    30    40    50    60    70    80    90    99
```
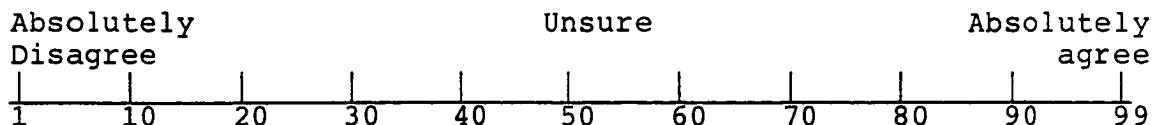
_____44. Almost all administrators at this university are personally satisfied with the way things are accomplished around this university.

_____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
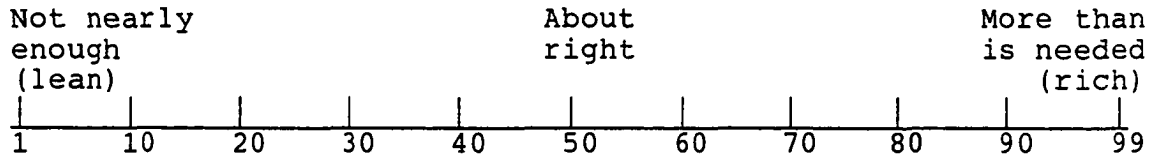
_____51. Prospective students

_____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
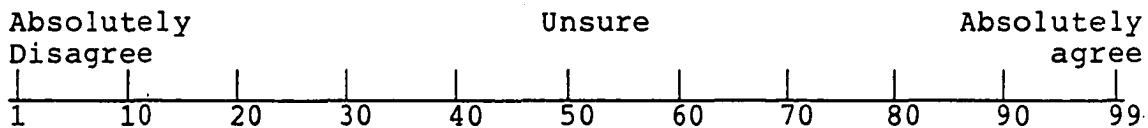
_____57. It is extremely important to have students satisfied with their educational experiences.

_____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.

Absolutely   Unsure   Absolutely
Disagree   agree

| | | | | | | | | | | |
1   10   20   30   40   50   60   70   80   90   99
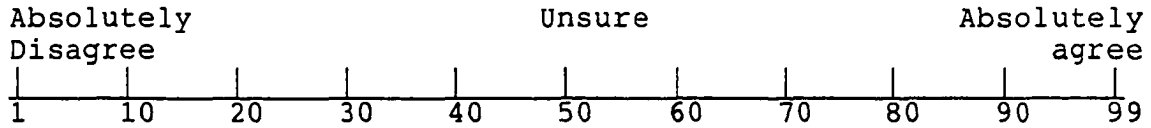
_____60. It is not important to have students develop in
personal, non-academic areas (e.g., socially,
religiously, emotionally, etc.).

_____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-
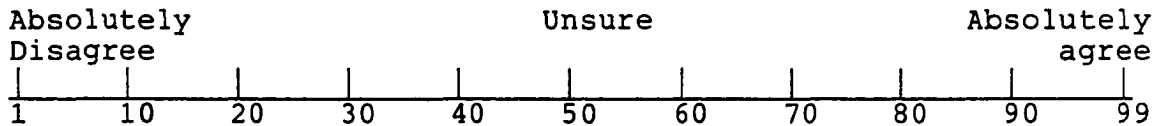community or university-environment relations.

_____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).
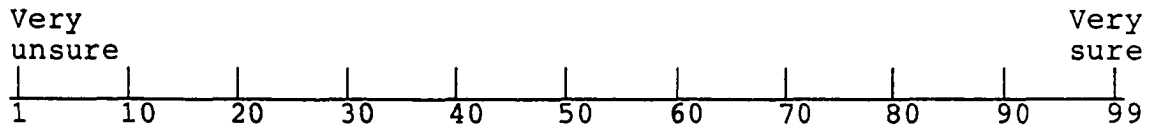
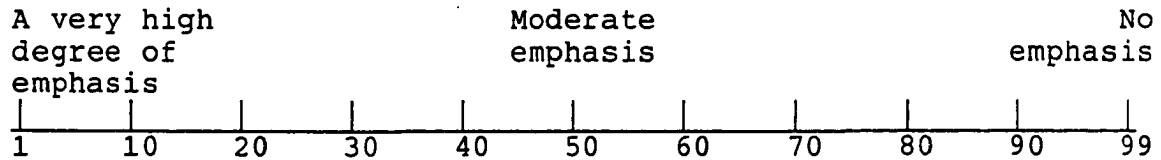Very   Very
unsure   sure

| | | | | | | | | | | |
1   10   20   30   40   50   60   70   80   90   99

SECTION 4

```
Absolutely                        Unsure                    Absolutely
Disagree                                                       agree
|     |     |     |     |     |     |     |     |     |     |
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.

A very high   Moderate   No
degree of   emphasis   emphasis
emphasis

```
 |    |    |    |    |    |    |    |    |    |    |
 1   10   20   30   40   50   60   70   80   90   99
```

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   1   2   3   4   5   6   7   Impotent
     constituencies   with outside
                                                  constituencies

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

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

86. Controlled by outside 1   2   3   4   5   6   7   Autonomous
     outside influences   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,   1   2   3   4   5   6   7   Short-sighted,
     furure oriented   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   1   2   3   4   5   6   7   Exclusively
internal affairs   emphasizes
                                                       external
                                                       affairs

SECTION 7

<u>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.</u>

FOR EXAMPLE:

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

| warm, bright, and sunny | (1) 2 3 4 5 6 7 | cold, wet, and dismal |

HOW DO YOU PERCEIVE THE FOLLOWING?

92. <u>Student/faculty relationships.</u>

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

93. <u>Interdepartmental relations in the university.</u>

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

94. <u>General pattern of supervision and control.</u>

| rigid control, strict supervision, pressure for conformity | 1 2 3 4 5 6 7 | respect for differences, personal freedom, individual autonomy |

95. Equity of treatment and rewards.

people treated   1 2 3 4 5 6 7   favoritism and
fairly and rewarded   inequity present,
equitably   unfair treatment
                                             exists

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

recognition received 1 2 3 4 5 6 7   no rewards for
for good works,   good works, no one
rewarded for success   recognizes success

97. The amount of information or feedback you receive.

feel informed, in-   1 2 3 4 5 6 7   feel isolated,
the-know, information   out-of-it,
is always available   information is
                                             never available

98. Type of communication that is typical.

guarded, screened,   1 2 3 4 5 6 7   open, authentic,
cautious, formal   personal, free

99. The general social environment.

cooperative,   1 2 3 4 5 6 7   competitive, no
supportive, mutual   support,
concern for others,   unsympathetic,
humane   "everyone for
                                             himself"

100. The flexibility of the administration.

willing to change,   1 2 3 4 5 6 7   rigid, unwilling
adaptable,   to change,
progressive,   stagnant,
flexible   unyielding

101. General level of trust among people here.

high suspicion,   1 2 3 4 5 6 7   high trust,
fear, distrust,   security, opennes
insecurity

102. <u>Conflict and friction in this institute.</u>

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

103. <u>Resolution of disagreements or conflicts.</u>

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

104. <u>Use of the talents and expertise of faculty members and administrators.</u>

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

105. <u>Organizational health of the institute.</u>

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

106. <u>Long term planning and goal setting.</u>

much goal directed   1 2 3 4 5 6 7   no goal directed
activity, long term   activity, no
planning, continuous   planning, no goal
assessments   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   1   2   3   4   5   6   7   Competition,
mutual support   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?

	Markedly increased						Markedly decreased
118. Faculty power	7	6	5	4	3	2	1
119. Collegiality among faculty members	7	6	5	4	3	2	1
120. Collegiality between faculty members and administrators	7	6	5	4	3	2	1
121. Complexity of procedures or "red tape"	7	6	5	4	3	2	1

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

	No impact						High impact
122. Wages	1	2	3	4	5	6	7
123. Tenure	1	2	3	4	5	6	7
124. Governances	1	2	3	4	5	6	7
125. Grievances	1	2	3	4	5	6	7
126. Fringe benefits	1	2	3	4	5	6	7

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.