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ORGANIZATIONAL INEFFECTIVENESS: A CASE STUDY OF NIGERIA'S AJAOKUTA STEEL COMPANY

by

Michael Olumide Ojo

M.S., George Washington University, 1978
B.M.E., Catholic University of America, Washington, DC, 1975

Dissertation Submitted in Partial Fulfillment of
the Requirements for the Degree of
Doctor of Philosophy
Applied Management and Decision Sciences

Walden University
August 2001

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DOCTOR OF PHILOSOPHY DISSERTATION

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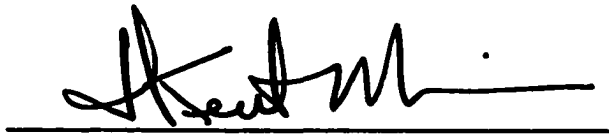

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**Dr. Constantine O. Alfred-Ockiya, Committee Chair
Applied Management and Decision Sciences Faculty**

C Fred Ockiya

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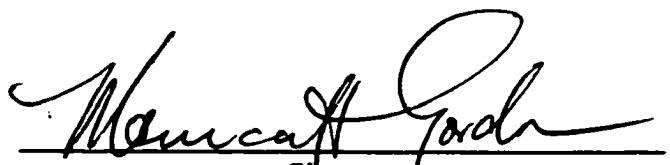

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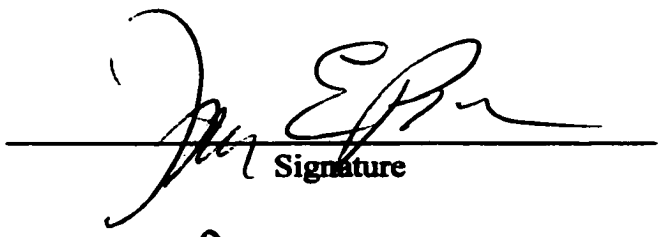

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Abstract

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ABSTRACT

This study investigated the behavior and practices of a Nigerian steel company in order to determine its organizational effectiveness. Using the process measure of effectiveness, normative and descriptive indicators were used to provide information about the attainment of goals such as adaptability, productivity, job satisfaction, profitability, and resource acquisition. A 48-item Likert scale questionnaire was administered to a sample of 300 employees, representative of all levels and departments of the steel company. Means and standard deviations were computed for each statement. Resulting implications and the qualitative analysis were linked to each of the five dependent variables. Results showed that the organization has not been effective because its practices were not in conformance with the rational, natural, and open system organizational model. The company's lowest effectiveness measure was adaptability and flexibility; the second lowest was resource acquisition. The findings suggest that innovation, initiative, and organizational learning must be integrated into the organizational climate of such companies in the developing world in order to allow firms to take advantage of change instead of reacting to it.

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CHAPTER 1: INTRODUCTION TO THE STUDY

Introduction

Defining and determining the effectiveness of an organization is not a straightforward matter. To inquire into effectiveness is to ask how well an organization is doing relative to some set of standards. The pursuit of this simple question generally leads organizational management researchers and practitioners into some complex and controversial issues. Most analysts seek to determine how well the organization is doing for itself. Still other investigators believe that organizations should be evaluated in terms of their contributions to the environment or public. How effectiveness will be measured is an important question.

Different constituencies have differing interests in the effectiveness of any organization and seek to propose criteria that reflect their respective interests. Although many people would agree on the central role of management in achieving organizational effectiveness, it is not an easy task to specify what "effectiveness" means. To an economist, organizational effectiveness is synonymous with profit—or excess of returns over expenditures. To a production manager, effectiveness is the quality or quantity of output of goods or services. And for social scientists, effectiveness is often viewed in terms of job satisfaction. Many theorists stress the importance of adaptability and flexibility as criteria of effectiveness. Weick (1977) emphasized these dimensions in arguing that effective organizations are characterized by a diversity of techniques for breaking out of normal cognitive and normative constraints, means of simultaneously crediting and discrediting information received, and structural units that are loosely articulated so as to maximize sensitivity to the environment and diversity of response.

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Mott (1972) defined organizational effectiveness as "the ability of an organization to mobilize its centers of power for action-production and adaptation" (p. 17). Cummings (1977), on the other hand, argued that "an effective organization is one in which the greatest percentage of participants perceive themselves as free to use the organization and its subsystems as instruments for their own ends" (p. 60). Thus, organizational effectiveness means different things to different people.

Several organizational effectiveness researchers (Campbell, 1983; Scott, 1998; Steers, 1977) integrate organization-wide factors—such as structure, policies, and technology—with individual factors—such as employee motivation, job satisfaction, and skills—in order to study effectiveness. This is done in the belief that any dynamic model of organizational effectiveness must examine the processes by which individual effort and behavior influence organizational performance. Thus, the focus of this research is on how organizational and employee behavior jointly influence subsequent organizational performance.

This research used an organization as a case study for measuring effectiveness. This focal organization is the Nigeria's Ajaokuta Steel Company[1]. Begun 20 years ago, the Ajaokuta Steel Company in Nigeria represents one of the largest industrial projects Nigeria has ever built. Yet over the years, the average production per year has been less than 10% of the design capacity. Employee morale and job satisfaction have not proved encouraging. Ajaokuta's ability to acquire necessary resources from its environment needs great improvement, by way of forming alliances and collaborating with agencies

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[1]Oral permission to use the company name was granted by Mr. Joseph Tomori, DGM Production, Ajaokuta Steel Company.

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and institutions that are connected with it, as determined by what they produce or the service they render.

In this chapter, the statement of the problem and the desired organizational effectiveness model—a rational, natural, and open system—will be presented. The research question, significance of study, and the significance for social change will follow.

Statement of the Problem

Commenting on the funding of Ajaokuta Steel project, the Economic Intelligence Unit, Limited reported in 1990 that the World Bank would not finance the second phase of the project. The 1 million-tons/year-capacity flat steel plant was considered unwise since Nigeria only had a domestic market of 300,000 tons/year. The report added that in addition to technical and financial problems, there had been gross mismanagement as well as the theft of equipment and machinery (EIU Country Report, No. 1, 1990, p. 20). This mismanagement could have occurred at the cabinet level, the internal organization level, or both. All the Nigerian parastatal organizations, including the Ajaokuta Steel Company, have been associated with waste and organizational ineffectiveness (Alubo, 1991; Onyeoziri, 1990).

This study considered the problem of ineffectiveness in light of both internal and external constituencies. The interrelationships between social or behavioral development and technological or economic development were touched on above. Nevertheless, it is argued here that the surrounding circumstances mentioned thus far in regard to Ajaokuta Steel Company are not wholly responsible for the organization's ineffectiveness. For example, the two mills commissioned in 1983 were designed to produce about 300,000

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tons/year each The interview responses from informed officials confirmed that each of these two mills produced an average of less than 30,000 tons per year (about 10% of capacity) for 17 years. Apart from the record of low productivity. Ajaokuta has failed to perform satisfactorily in its natural resources acquisition. For example. coking coal that is required in large quantities for production is available abundantly at Lafia/Obi Reserves in Nigeria. An estimated reserve of 162 million tons has been located at that site since 1978. Yet all the past needs for coking coal have been imported from Europe. No significant successes have been achieved in regard to the other facets of effectiveness. For example, lack of job satisfaction has been demonstrated by unchecked excessive employee absenteeism.

According to Sproull (1988), a problem statement includes at least two variables along with their probable relationship, "usually stated in question form" (p. 26). According to Kerlinger (1973), "A problem, then, is an interrogative sentence or statement that asks: what relation exists between two or more variables? The answer is what is being sought in the research" (p. 17).

Posed in a question form, the problem that sparked this research may be stated as follows: To what extent do the management practices of the Nigeria's Ajaokuta Steel Company contribute to its general organizational ineffectiveness, and how does the level of effectiveness. based on one criterion, relate to the other criteria of effectiveness?

The findings from this study are expected to influence the decision making of the Nigerian government as well as the internal management of the Ajaokuta Steel Company. In Nigeria and other developing nations, the lack of necessary information has long handicapped policy makers in making decisions.

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Organizational Effectiveness in a Rational, Natural, and Open System

Concepts such as productivity, return on management (ROM), and efficiency relate directly to effectiveness but are all different when applied to an organization. Drucker (1985) distinguished efficiency from effectiveness; efficiency is doing things right, and effectiveness is doing the right thing. Sink (1985) defined productivity as "the relationship of the amount produced in a given period of time, and the quantity of resources consumed to create or produce those outputs over the same period of time" (p. 5). According to Simmons and Davila (1998), "The Return on Management (ROM) is a ratio of the productive organizational energy released, divided by the management time and attention invested" (p. 74). Simmons and Davila noted that in high ROM companies, goals are clear to all employees and task achievements are convergent, whereas in low ROM companies, no one is certain which performance variables are being measured or why.

These three concepts—productivity, efficiency, and return on management—are generally applicable to a rational system model. The effectiveness of an organization, on the other hand, is viewed from a wider perspective. The rational and open system perspectives account for much of the variance in measures of effectiveness (Scott, 1977).

The effectiveness of an organization is its level of goal attainment (Scott, 1998). The criteria of emphasis focus on the number and quality of outputs and the economies realized in transforming inputs into outputs. Measures of effectiveness from a rational system perspective take the specific goals of the organization as the basis for generating effectiveness criteria. The natural system model views organizations as collectivities that

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are capable of achieving specific goals but are engaged in other activities required to maintain themselves as a social unit (Scott, 1998).

The criteria generated by this conception include measures of participants' satisfaction and morale. The open system model regards organizations as being highly interdependent with their environments and engaged in system-elaborating as well as system-maintaining activities. The ability to detect and respond to subtle changes in the environment is critical. As a result, the organizations' ability for information acquisition and processing are viewed as a major determinant for effectiveness. Yuchtman and Seashore (1967) argued from the open system perspective that the most appropriate criterion for assessing organizational effectiveness is the organization's bargaining position, as reflected in its ability to exploit its environment in acquiring scarce and valued resources (p. 898).

Gerbert and Boerner (1999) distinguished between open and closed corporations:

> In a closed system the human being is seen as an object, the interests are homogeneous, the people are of unequal value, protection is to be given to the collective, and the knowledge is error free. In an open system, on the other hand, the human being is a subject, the interests are heterogeneous, the people are of equal value, protection is to be given to the individual, and the knowledge is imperfect. In the former, the key words are stability, predictability, harmony, hierarchy, law and order, clarity, and meaning. In latter, initiative, innovation, pluralism, equal opportunity, individuality, liberty, tolerance, and learning are emphasized. (Gerbert & Boerner, 1999, pp. 341-359)

Purpose of the Study

The purposes of this study were as follows:

1. To determine the organizational effectiveness of Ajaokuta Steel Company and to suggest effectiveness improvements for this company.

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2. To pinpoint, in view of the contemporary developments in organizational management, particular management practices at ASCO that are inconsistent with the rational, natural, and open system theory. It was assumed that achieving this goal would positively influence the economic policy and decision-making bodies internal and external to Ajaokuta.

3. To offer generalized recommendations for similar organizations in Nigeria and other developing countries.

Theoretical Foundation

In most of the less-developed world, including Nigeria, history has shown that governmental and quasi-governmental departments and institutions are not managed with the same efficiency and effectiveness as they are in developed countries. According to Rothstein (1977), obstacles to growth and development in the less developed world, especially in Africa, include the conservatism of leaders and the elite and their tendency to compromise domestic needs in favor of foreign economic interests (p. 194). Rothstein also noted that in the less-developed nations, order takes priority over creating national wealth; as such, policies are not aimed at creating the conditions for long-term prosperity. Rothstein concluded that even when underdeveloped countries can escape a large degree of dependence on the international system, policies such as these ensure that any dependence that does persist will be extremely debilitating (pp. 183-184).

Touraine (1977) defined less-developed nations as closed societies; in a closed society the mechanisms of internal change have only slight importance since the social organization is modified only by external mechanisms (pp. 421-422). Other theorists of national growth and development see the situation differently. Kunkel (1970), for

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example, argued that "many communities in developing nations are unlikely to undergo significant change until widespread behavioral alterations occur" (p. 251). The question is whether the individual operating at the personality level, rather than self or egocentric, will transform the society from operating at the constraint level to the cooperative level, or whether the converse should be expected. Sociologists, including Piaget (1965), believe that the individual and the society influence each other (pp. 215-247).

Three decades ago, several radical analysts of African development problems argued that regional cooperation seemed to be a rational response. These analysts (Amin, 1970; Green & Seidman, 1968) advocated for a continental or pan-African closed strategy of industrialization.

More recently, Martinez (1998) reviewed the rise of globalization and highlighted two of its dimensions. From the Woods Agreement in 1944, leading to the establishment of the World Bank, the International Monetary Fund (IMF), and the General Agreement on Tariffs and Trade (GATT), to the Trilateral Commissions of the 1960s and 1970s, to the World Trade Organization (WTO) and the Uruguay Round of the General Agreement on Tariffs and Trade (URGATT) of this decade, the development of global capitalism has been apparent. However, the integration of technology in the operations of transnational corporations has not provided technology transfer, nor was technology transfer intended. Also, social inequality has intensified at both national and global levels (Martinez, 1998, pp. 601-609). Martinez predicted that globalization will not benefit developing countries because "the developing countries' natural resources will only be used to further develop the already developed states" (p. 612). Martinez was actually referring to the less-developed nations as the developing countries.

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Foran (1997) presented a causal theory of social revolution. Five factors have been identified as necessary but not sufficient for social revolution to succeed: (a) dependent development, (b) repressive and personalist state, (c) an existence of political cultures of opposition, (d) poor economy, and (e) relaxation of external controls.

Research Question

Management effectiveness is key to organizational success (Ansoff, 1979; Deming, 1986; Kanter, 1983). The rational, natural, and open system model has been prescribed as relevant to managing modern organizations (Kanter, 1999; Scott, 1998). Through a combined quantitative and qualitative approach, this research addressed the following question: Has the lack of success at Ajaokuta occurred because its organizational behavior and practices did not match the rational, natural, and open system model of organizational management?

Focus of the Study

While it is a widespread belief that the government in most underdeveloped nations is corrupt (Hofstede, 1999; Rothsein, 1977), the Nigerian government practices and its failures in offering necessary stimuli to the success of Ajaokuta was not treated as a factor in this study. Nor were the unmet expectations from the other external constituencies, including the World Bank, considered as a variable. Instead, this study focused on the Ajaokuta Steel Company. The assumption in this study is that Ajakuta, as a subsystem within a larger system, is capable of operating on practices and behaviors that promote organizational effectiveness by mobilizing its centers of power for action to achieve organizational goals, and by influencing the larger system to which it belongs.

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Subsystems in an open system are influenced by their environment; subsystems are also capable of influencing and transforming the larger system (Parsons, 1960; Scott, 1977). The organizational behavior, practices, and work processes of the Ajaokuta Steel Company constituted the focus of this study.

Significance of Study

The findings from this study are expected to influence the decision making of the Nigerian government and the management of Ajaokuta Steel Company. It is expected that the results of this study will apply to other developing economies in Africa and will provide the basis for comparison with highly industrialized economies. In particular, the results of this study will be applicable to government companies and projects in Africa.

Significance for Social Change

Research addressing social change in Nigeria is scant. The few publications that exist are usually directed to the Nigerian government to lead by example (Alubo, 1991; Onyeoziri, 1990). Change can also be realized within a given system when there is a change in the subsystems. Where a nation is a system, formal and informal organizations are subsystems.

A commitment to perform within the limits of well-formulated values and standards, in cooperation with the other members of the organization, is expected to produce goal attainment for the individuals and for the organization as a whole. The cooperation skills acquired at the organizational level are transferable to the society.

An improved effectiveness in the work processes of Ajaokuta Steel Company would bring about increased productivity. If self-sufficiency is attained in this important

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area of the Nigerian economy, the government's import spending on steel products will be reduced. Increased internal spending by the government would improve the living standard of the average Nigerian. Success in this important area of development would create a willingness on the part of the Nigerian government to reassign resources to similar areas to stimulate economic growth; the Nigerian government may be able to formulate official policies that shape savings and investment.

Summary

This section has attempted to define the effectiveness construct; the effectiveness of an organization is determined by how well an organization is doing relative to some set of standards. It has been shown that the criteria for evaluating organizational effectiveness cannot be produced by some objective process. They are often controversial and are as varied as the theoretical models used to describe organizations and the constituencies that have interests in their functioning.

The focus in this study is the Ajaokuta Steel Company. The Nigerian government's inadequacies in the way of promoting development and offering stimuli to the success of Ajakuta is not factored into the analysis. It is assumed in this study that Ajaokuta, as a subsystem within a system, has the capability to mobilize its centers of power for action to achieve organizational goals. In an open system, organizations are highly interdependent with their environment; an organization can both influence, and be influenced by, the larger system to which it belongs. It is argued that in spite of various environmental constraints, Ajaokuta Steel Company could have been more effective if its organizational behavior and practices had matched the rational, natural, and open system

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model of organizational effectiveness. Organization-wide factors and individual factors are integrated in order to study the effectiveness of Nigeria's Ajaokuta Steel Company.

By assessing the organizational effectiveness of Ajaokuta, this study will offer effectiveness stimulants for this organization. It will also offer generalized recommendations for similar organizations in Nigeria and other developing countries. Findings from this study are expected to influence the decision making of both the Ajaokuta management and the federal government of Nigeria. In particular, findings from this study will be applicable to other government companies in Africa.

In Chapter 2, the Nigeria Ajaokuta Steel Company will be presented. Discussions will touch on the history of this company and relevant background information. Chapter 3 reviews the literature on organizational effectiveness. In Chapter 4, the method of this study is outlined. Chapter 5 presents the results in the form of qualitative and quantitative analyses. Chapter 6 summarizes the key issues and offers suggestions and recommendations.

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CHAPTER 2: THE FOCAL ORGANIZATION

Introduction

Organizational effectiveness is the ability of an organization to mobilize its centers of power for action. Organizational effectiveness is multifaceted; facets of organizational effectiveness often include adaptability and flexibility, productivity, profitability, employee job satisfaction, and resource acquisition.

In this chapter, a brief history of the Nigeria's Ajaokuta Steel Company will be presented. After outlining background information on this focal organization, the Ajaokuta Steel Company will be presented to depict its various levels of attainment.

Background

Much has been written about the evaluation of industrialization in the developed world and the emergence of the information age. In the United States and other developed nations, the 18th century saw the shift from an agricultural orientation to the industrial concept. This trend continued, and in the 1950s the industrial society entered a postindustrial period characterized by a shift to a service economy and greater concern for the natural and social environment.

The major industrialized nations of the world of today—the United States, Japan, Britain, France, Germany, Italy, and Canada—have well-developed infrastructures and large-scale industrialized diversification. Most industrial companies in the advanced economies incorporate computers and other communication systems in order to enhance efficiency.

Other countries are closing in rapidly on the industrialized nations. These developing nations include Singapore, Taiwan, South Korea, and Hong Kong, all in

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Southeast Asia, as well as Brazil, Mexico, and Malaysia. These countries have, in the present decade, rapidly expanded their infrastructure and diversified their industrial base. Per capita income has grown, resulting in increased purchases of appliances, automobiles, and other consumer goods and services.

The third group of nations, generally referred to as the less-developed countries, has relied primarily on agriculture and natural resources for economic growth. Some of these countries have begun to develop infrastructures in selected industries.

Nigeria clearly falls into the less-developed category. Blessed with abundant natural resources, Nigeria has not developed its economic potential. Over half of Nigeria's labor force is still engaged in agriculture, and only about one fifth are employed in industry and commerce. Nigeria is the largest country in Africa, occupying some 913,073 square kilometers of land area with a population of some 120 million people.

Nigeria's economy witnessed dramatic and rapid growth in the 1970s as a result of the oil boom, providing a financial base for massive public-sector investment in infrastructure, manpower development, and formation of an industrial base geared to the huge domestic market. However, this growth soon slowed with declining oil prices, coupled with poor management of the economy by the Nigerian military leadership. Meanwhile the economy has assumed a monocultural character, as traditional exports such as cocoa, palm produce, groundnuts, cotton, rubber, and others dwindled into insignificance.

In spite of huge government spending aimed at industrial development, there has been very little success by the new industries. Ajaokuta Steel Company is clearly one of the highly regarded manufacturing industries. Nevertheless, the Ajaokuta Project, begun

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20 years ago, has a history of wasteful spending and severe underproductivity (Alubo, 1991).

The Ajaokuta Steel Company (ASCO)

The Nigerian military government, headed by General Olusegun Obasanjo, conceptualized the idea of building Nigeria's own self-sufficient steel industry in 1978. In 1980, the democratically elected government of President Shehu Shagari began the Soviet Union-designed project.

The Ajaokuta Steel Company (ASCO) project is located near Ajaokuta village, situated at the West Bank of River Niger and about 10 miles (16 km.) south of the Niger-Benue tributary. The location was selected for its industrial water use and access to water transportation. Another factor taken into consideration was the factory's close proximity to Itakpe iron ore, which is required regularly and in large quantities to produce ASCO's product lines.

In addition to the steady and large quantity supply of iron ore, limestone, dolomite, iron ore lumps, manganese ore, ferro-alloys, and coking coal are also required for steel production. ASCO's product lines were to include rounds, ribbed bars, angles, channels, beams, hexagons, and strips.

The major contracting firm, Tiajpromexport (TPE) of the then-Soviet Union, began the construction and equipment installations in 1980. Other contracting firms, (civil contractors) were allocated works by geographical location and by complexity. Fougerolle (a French construction company) was allocated the completion of all civil works in Lot 1 of the steel township. Julius Berger (a German construction company with a proven record of success in road construction works in Nigeria) handled Lot 2, while

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Lot 3 of the steel township was handled by Dumez (French). The consulting firms were the Nigerian Pan African Consultancy Services (PACS), and the Indian firm, Metallurgical Engineering Consultants (MECON). The PACS-MECON partnership was to manage the entire first phase of the Ajaokuta project.

There were to be three phases in the construction of this project. The first comprised a beam plant, a roll mill, a prism plant, and one black furnace. The second phase was to be an addition of one flat mill, and the addition of one black furnace was to constitute the third phase. The completion of stage one would enable the company to produce 1.3 million tons per year of varied steel products, at full capacity. The completions of stage two and stage three would enable Ajaokuta to produce 2.6 million tons and 5.2 million tons per year, respectively, if it operated at full capacity.

The support projects included the construction of residential housing units that were contracted to a number of other minor local contractors, in batches of 500 units per contractor. Most of the housing units were completed as early as 1984, but the major construction project is yet to be completed.

In 1990, the Economic Intelligence Unit Limited (EIUl) noted that Ajaokuta was intended to be the centerpiece of an ambitious steel development program designed to make Nigeria one of the largest producers in the developing world, but progress had been seriously hindered by financial and other problems. Originally scheduled for 1988, the completion date for stage one was reset for 1991 (EIU Country Report, No. 3, 1990). The two mills commissioned in 1983 produced steel products at a fairly regular rate but at minimal levels of 88,000 tons each per year until March 1988.

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The EIUL attributed the delay to financial problems: "Financing for the project has long been problematic, causing disagreement with the World Bank about the viability of the project. Originally planned to cost $1.4bn, more than $4bn had already been pumped into its construction as of 1990" (EIU Country Report, No. 3, 1990, p. 18).

The steel products turned out by ASCO's mills have not been produced from basic raw materials. Billets imported from overseas countries, including Great Britain and Brazil, were fed into the mills at the appropriate stage. The EIUL reported that "iron ore is planned to come from the Itakpe reserves, where production has not started" (EIU Country Report, No. 3, 1990, p. 18).

The buyers of ASCO's products have been local consumers, distributors, or stockers, as well as other corporate organizations, including Julius Berger, that use steel products extensively in their construction works. In 1990, as the activities of ASCO halted, about 20% of its staff was laid off in a downsizing exercise aimed at saving costs in the organization's idle period. As of 1991, the total cost on the Ajaokuta Steel Project was estimated at $5bn, and a further $2bn was then thought to be the sum required before the entire first phase of the project could be completed. Ajaokuta had for a long time been a source of friction between the World Bank and the Nigerian government. Bank officials believed that the second phase of the project was unnecessary and too large. Only 300,000 tons/year of flat steel was estimated to be for local needs, and excesses for exports were deemed economically unwise. Phase one of the project was to produce 1.3 million tons of steel products per year.

In 1992, E. I. U. Country Report noted several technical and financial implications:

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> As of 1992, the Phase One was just nearing completion, some six years behind schedule, with the four rolling mills completed and the main steel-making plant 90 percent completed. The project was originally conceived in three phases with an ultimate capacity of 5.3 Mtons/year, but with all the technical and financial problems so far many had expected phases two and three to be postponed or cancelled outright. The 2.1 Mtons/year of iron ore concentrates needed for Ajaokuta would be provided by the Itakpe complex, but supplies for coking coal were not yet assured. Some 1.4 million tons of coking coal per year would be needed and would have to be imported. If foreign exchange continued to be in short supply, then security of coal could not be guaranteed. (EIU Country Report Number 1, 1992, p. 22)

In 1995, at the African Mining Investment Symposium, held in Toronto, Mr. Adegboye, an engineer from the Nigeria's Ministry of Power and Steel, addressed the participants. He noted that phase one of the Ajaokuta steel plant was then 98% completed, in terms of the engineering and foundation works and equipment installation. This Nigerian official declared that the plant's readiness was not yet matched by local sourcing of the key raw materials required, namely iron ore and coking coal. Iron concentrates were being stockpiled at the National Iron Ore Mining Project (NIOMP) at Itakpe, but the supplies of coking coal were scarce. Adegboye further stated that the exploration of the Lafia/Obi reserves in Nigeria had been under consideration since 1978, and that the preliminary studies conducted over the years indicated that Lafia/Obi had estimated reserves of 162 Mtons, of which some 32 Mtons were contained in the seam that was proposed for exploration. Adegboye indicated that the coal in that seam had been tested as having 33% ash content and 3.8% sulfur. At the same symposium, the project director and chief executive of NIOMP, Usman Turaki, outlined the progress made by NIOMP in exploiting the Itakpe iron ore reserves. Turaki informed the symposium participants that the production of concentrates commenced in 1993 and that over 170,000 tons of 63-67% Fe-grade concentrates had been produced and stockpiled

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for supply to Ajaokuta (EIU Country Report, 3rd quarter, 1995). The status of completion has remained the same since 1995.

Summary

This study argues that Nigeria has the greatest potential for development in Africa. This has been concluded from the vastness and diversity of Nigeria's land resources, its population, and the magnitude of its natural resources. Like many other African countries, industrial development has proved difficult in Nigeria. The case of Ajaokuta Steel Company, begun about 20 years ago by the Nigerian government but reaching a highly limited goal attainment, has been presented.

The Ajaokuta Steel project was designed in 1979 to occur in three phases. After the three phases were completed, the mills would be producing 5.2 Mtons of varied steel products per year. Phase one, designed to produce 1.3 Mtons per year, has yet to be completed. Each of the two mills in the phase one project completed and commissioned in 1983 has always produced at below 30% capacity per year.

Chapter 3 will present the literature review on organizational effectiveness. From the contributions of several authors on organizational effectiveness, a case will be made for the process measure of effectiveness.

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CHAPTER 3: LITERATURE REVIEW

Rational and Institutional Determinants of Organizational Practice

Gooderham, Nordhaug, and Ringdal (1999) compared human resource management in firms located in Germany, France, Denmark, Norway, Spain, and the United Kingdom. The authors distinguished between calculative practices, aimed at efficient use of human resources, and collaborative practices, aimed at promoting the goals of both employees and employer. The authors' theoretical arguments were tested by an empirical analysis of firms in the six countries. Results showed that institutional determinants, as indicated by the national embeddedness of firms, had a strong effect on the application of both calculative and collaborative human resource management practices. Firm size, a rational determinant, had a considerable impact on calculative practices, whereas the effect of industrial embeddedness was modest for both practices. "Through various mechanisms of coercion, normative regulations, and imitation, organizations sharing the same environment are believed to become structurally similar as they respond to like pressure; that is, they will demonstrate isomorophism" (Gooderham, Nordhaug, & Ringdal, 1999, p. 507). The new institutionalism in organization theory emphasizes the pressures for acquiring and maintaining legitimacy in relation to the environment (DiMaggio, 1983; Powell & DiMaggio, 1991).

Gooderham et al. (1999) noted that cross-national dissimilarities in institutional structures are likely to create management practices that vary from country to country, regardless of the fact that management theories are often rapidly disseminated across national boarders. The authors identified the legal rules, political conditions, and attitudes

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of labor unions toward management as variables that contribute to management practices (pp. 507-509).

In different countries, dissimilar organizational forms and practices may prove equally efficient due to varying cognitive rationality criteria, legislation, and normative structures (Cole, 1989; Orru, Biggart, & Hamilton, 1991). This is in conformance with the classical theory of contingency, which is generally presented in three parts: (a) there is no best way to organize, (b) different ways of organizing are not equally effective, and (c) the best way to organize depends on the nature of the environment to which the organization relates (Galbraith, 1973; Scott, 1998; Williamson, 1991).

From a dynamic perspective, Strang and Meyer (1993) argued that the diffusion of institutional patterns occur and will be better understood if an examination of the relational connections among the social entities involved in diffusion processes is supplemented with cultural and cognitive connections. They contended that "diffusion increases when the actors involved are perceived as being similar, and when the practices are being theorized to be modern" (Strang & Meyer, 1993, p. 492). Bandura (1986, 1997) suggested that individuals hold performance beliefs about the groups to which they belong and that the strength of groups and organizations lies in people's sense of group s efficacy that they can solve their problems and improve their lives through concerted effort. Bandura (1986) suggested that efficacy is, in part, socially constructed and may differ from culture to culture.

A cultural characteristic germane to group dynamics is social hierarchy (Weber, 1947) or power distance (Hofstede, 1991). Hofstede (1991) argued that power distance is reflected by the relative acceptability for such differentials to exist as supported by a

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social environment and natural culture. For example, Hofstede suggested that in high-power-distance cultures, subordinates expect and are more satisfied with a direct style of management from their superiors, whereas in a low-power-distance culture more participatory practices are expected and considered to be acceptable.

With regard to decision making in a high-power-distance culture (e.g., Japanese, Nigerian), decisions are made according to a bottom-up procedure in which a subordinate submits a tentative solution or decision to a problem. As the idea clears successive levels of the organization, it is adjusted accordingly. By the time the decision makes it to the top, it has been altered and endorsed by successive officials who will be involved in its implementation (Earley, 1999).

Earley (1999) compared two high-power-distance cultures (France and Thailand) and two low-power-distance cultures (England and the United States). Earley concluded that in a high-power-distance culture, group efficacy and performance will be most directly related to the views expressed by high status group members, while in low-power-distance cultures, group efficacy and performance will be reflected equally by all group members' opinions.

Managing Organizations in a Globally Connected World

Global connectivity involves the flow of capital, people, and information (Bennis, 1999; Kanter, 1999). Kanter (1999) noted, "The defining feature of the global economy is not the flow of goods—international trade has existed for centuries—but the flow of capital, people, and information" (p. 8). Kanter (1999) observed that the approach to managing organizations worldwide is approaching uniformity: "In key industries, country-by-country approaches are being replaced by global strategies" (p. 10). Kanter

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asserted that in order for an organization to be successful it must attain world standards in collaborate advantage, multilocalism, and community embeddedness.

> Management by fact will increasingly embarrass those still engaged in management by corruption or cronyism. Companies will collaborate to achieve speed and quality through closer integration with suppliers and customers. Globalism does not mean homogenization; it requires strategies and practices that accommodate to the diversity that exists across countries. (Kanter, 1999, pp. 11-12)

Kanter (1999) concluded that the most important assets of 21st-century companies will be what she called the 3 Cs: concepts (ideas driven by innovation), competence (skills and ability to use them, improved by teaching and learning), and connections (strategic relationship and collaboration).

Strategic Management and Competitive Management

The concept of strategy is wider in its application than is that of goal. Chandler (1962) defined strategy as "the determination of the basic long-range goals and objectives of an enterprise, and the adoption of courses of action and the allocation of resources necessary for carrying out their goals" (p. 13). Goals constitute a subset of organizational strategies.

The distinct features of strategy are external concerns or the linkage of the organization to its environment, as well as selection of domain or kind of business and how to compete in the business. Porter (1980) has identified three generic competitive organizational strategies:

1. Overall cost leadership—producing in high volume and holding costs low relative to competitors.

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2. Differentiation—creating a product that is perceived by the environment as unique.

3. Focus—emphasizing a particular buyer group.

To avoid confusion between intentions and actions, and official and operational goals, Mitzbers (1987) suggested that distinctions be made between "intended" strategy (plans), "emergent" strategy (unplanned patterns of behavior), and "realized" strategy (actual behavior whether planned or unplanned).

Porter (1999) contended that the external environment determines strategy, and strategy determines structure. He suggested that strategy is greatly affected by organizational issues and may be determined or impeded by it. Porter added that a host of internal factors constrain or divert managers from formulating effective strategies and making the choices on which every strategy depends. "The way managers think about competition, the ways they measure their results, the structure in place, the incentives that are used to motivate people—all of these actually drive the choice of strategy, or more commonly, the choice of a nonstrategy" (Porter, 1999, p. 25).

There is no relevant distinction between strategy and implementation (Ansoff, 1997; Buono, 19991; Porter, 1989). There is, however, a distinction between operational improvement and positioning: "Operational improvement involves incorporating practices that would be good for any company. . . . The real advantage normally comes from differences in strategic position supported by tailored activities, trade-offs, and fit" (Porter, 1999, p. 26).

Hofstede (1999) contradicted a popular notion about "corporate culture," which assumes that shared values represent the core of a corporate culture (Peters & Waterman,

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1982). Hofstede concluded from his empirical study of 53 countries that shared practices should be considered the core of an organization's culture. In his cross-organizational study, employees' values differed more according to nationality, age, and education than according to their membership in the organization (Hofstede, 1999, pp. 38-39).

Hofstede (1999) cited figures from Transparency International, a nongovernmental organization located in Berlin, Germany, whose 1998 Corruption Perception Index (CPI), covering 85 countries, revealed that the perceived cleanest countries were Denmark, Finland, Sweden, New Zealand, and Iceland (in that order), and those perceived as the most corrupt were Cameroon, Paraguay, Honduras, Tanzania, and Nigeria. Hofstede remarked that 66% of the CPI could be predicted from a country's wealth or poverty. "Under conditions of poverty, acquiring money in unofficial way is not just a matter of greed; it may be a matter of survival." (p. 42).

Many organizational management experts assert that some of the change taking place in the organizational landscape is organic and inevitable (Bennis, 1999; Kerr, 1999; Nadler & Tushman, 1999). According to Bennis (1999), "Much of it is the legacy of our times ignited by that dynamic duo: globalization and relentlessly disruptive technology" (p. 72).

The "core firm" are people who are essential to the firm (Handy, 1989; Rousseau & Arthur, 1999). Sustaining and nurturing the core firm is the responsibility of the human relations management personnel (HR). Contemporary HR must ensure the firm fully participates in the knowledge-generating communities and knowledge marketplace that they sustain. The moral concern of HR links the demands of the core firm to the present or future employability of its people; keeping people connected to rather than detached

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from the labor markets is fast replacing the old idea of producing permanently secured employment (Rousseau & Arthur, 1999).

Difference in strategic capacity can explain how resourcefulness can compensate for lack of resources and why some new organizations can overcome the "liability of newness" (Aldrich & Auster, 1996; Ganz, 1999; Hammel, 1996; Rogers, 1995; Senge, 1990). Organizations with inadequate capital resources may be able to do well if they are able to capitalize on the knowledge of the environment and if they possess collaborative skills necessary to properly position them in various markets. Critical alliances and connections, information systems, and institutional supports are required for organizational success.

Organizational Effectiveness Construct

Researchers in the 1950s and early 1960s conceptualized organizational effectiveness as the measure of productivity. Later research, including Steers (1977), Katz and Kahn (1966), Yuchtman and Seashore (1967), Campbell (1977), and Cameron and Whetten (1983), challenged the use of a univariate variable to assess organizational effectiveness.

Campbell (1977) identified 30 criteria that were widely used to determine organizational effectiveness. The most prominent criteria were overall performance, productivity, employee job satisfaction, profit or rate of return on investment, and employee turnover. Univariate studies employed one of Campbell's measures as the dependent variable and examined the influence of independent or predictor variables, such as leadership style, to explain variance.

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Other researchers, including Sink (1985) and Ross (1977), used multivariate analysis to assess organizational effectiveness but reported that the single most reliable variable was productivity.

Steers (1977), in support of multivariate effectiveness measures, presented 17 of the several models that have been proposed by various thinkers, including Friedlander and Pickle (1968) and Katz and Kahn (1966), to explain the dynamics of organizational effectiveness. Typically, such models suggest that successful organizational performance is a function of several specific factors found in organizations. Each of the multivariate models was defined by each formulator to include the evaluation criteria, type of measure, the generalizability of criteria, and how such criteria have been derived (Steers, 1977, pp. 44-45).

Katz and Kahn (1966), with their systems model, suggested that organizational effectiveness is a joint function of efficiency and political effectiveness in the short term. "Like efficiency, political effectiveness contributes to the immediate profitability of the enterprise, and to its growth and survival power for the longer term" (p. 165). The major focal point in this model is the work processes and not necessarily the outcome. Katz and Kahn's primary evaluation criteria were productivity, survival, and control over environment. Their model was normative in the sense that they prescribed desirable behavior and it was applicable to all organizations, and their derivation was based on inductive reasoning and a review of empirical studies.

Yuchtman and Seashore's (1967) "system resource" model conceptualized effectiveness in terms of the ability of an organization to secure an advantageous

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bargaining position in its environment and to capitalize on that position to acquire scarce and valued resources.

Steers (1977) emphasized the role played by efficiency. "In the above frameworks, the role played by efficiency is unsurpassed. Under constrained circumstances, efficiency allows an organization to stretch limited resources and thus allows for increased productivity, growth, and expansion with the same amount of inputs" (p. 52).

Some of the best sellers in the organizational literature, such as Ouchi's (1978) Theory Z and Peters and Waterman's (1981) In Search of Excellence, provide valuable insights into new managerial techniques. They convey the message that organizational performance is primarily a matter of management effectiveness. These authors underemphasize such factors as industrial location, positioning in various markets, critical alliances and connections, information systems, and institutional supports. Fitz-enz (1997) also underplayed these factors and emphasized building a system for effective human assets management.

> Management's imperative is to help its human assets become knowledgeable. This starts with a clear understanding of the enterprise's values and strategy. It includes forming a coherent, innovative culture, communicating everything necessary, training people in how to work together effectively, and never settling for less than their best efforts. No amount of capital will be enough to offset the absence of knowledgeable, motivated people. Organizations that can find the tools and build the system for effective human assets management will be the winners. (Fitz-enz, 1997, p. 7)

Kanter's (1983) central theme to achieving effectiveness is by the practice of innovation. The author condemned traditional corporate bureaucracy in favor of a culture of innovation that is sensitive to changing environmental demands. Kanter noted that at the early stage, products are to be designed to customer preferences by incorporating

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modern technology. As the industry matures, saving costs and improving efficiency becomes the goal. This requires performance work methods that need to constantly change (Kanter, 1983, pp. 20-25).

Ansoff (1979) outlined a broad strategic behavior theory of an effective environmental-serving organization (ESO). He characterized every organization as environmental-serving and defined strategic behavior as the process of interacting with the environment and changing internal configurations and dynamics. Operating behavior is concerned with an organization's internal resources conversion process, while performance is a function of the organizational leadership's ability to mobilize subordinates to carry out clearly defined goal-oriented tasks within an adaptable environment (Dean & Evans, 1994). Ansoff (1979) noted that managerial perception of the objective reality in an environment represents the ESO's performance expectations (pp. 72-89).

Analysts' diverse conceptions of organizations are not the only source of variation in effectiveness criteria. Other bases of diversity include time perspective and level of analysis. For example, Hannan and Freeman (1977) pointed out that highly specialized organizations well adapted to their environment may outperform generalist organizations at a given point in time but may fare much less well over a longer period to the extent that the environment has changed. Also, organizations are necessarily at different stages of their life cycles, and the criteria appropriate for assessing effectiveness at one stage may be different for another (Hannan & Freeman, 1977, pp. 115-117).

The relative effectiveness of organizations also depends on what impact is being emphasized—the organization's impact on individual participant, or on the organization

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itself. "Our conclusions concerning the relative effectiveness of organizations will vary greatly depending on whether we emphasize their impact on individual participants, on the organization, or on broader, external systems" (Scott, 1998, p. 346). Cummings (1977) argued for the first. He proposed that an effective organization is one in which the greatest percentage of participants perceive themselves as free to use the organization and its subsystems as instruments for their own ends (pp. 60-61). Most analysts, including Yuchtman and Seashore (1967), take the organization itself as the appropriate level of analysis. Yuchtman and Seashore noted that a relevant view of organizational effectiveness answers the question, "How well is the organization doing for itself?" Still other investigators adopt a more ecological purpose—that organizations should be evaluated in terms of their contributions to the community they serve. For example, a defense organization may be evaluated in terms of the contributions it makes to the state's peace and safety.

Variations in time perspective on organizations and in level of analysis help to account for the diversity of criteria proposed in analyzing effectiveness. Yet there is another source of diversity, identified by Zammuto (1982), which is to be found in the varying sets of participants and constituents associated with the organization.

Evaluation Criteria

Scott (1998) noted that different participant groups and constituents in organizations have varying goals, viewed both as directive and as evaluative criteria. Also, stakeholders—comprising investors, clients, suppliers and buyers, regulators, community leaders, and news media—have genuine interests in the functioning of an organization and impose their own effectiveness criteria on it. Thus, there is little

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commonality or convergence, and some conflicts, in the criteria employed by various parties to assess organizational effectiveness (pp. 347-349). Meyer and Zucker (1989) argued that the existence of diverse constituencies with multiple interests helps explain the paradox that older organizations are less likely to fail even though performance does not improve with age. "Most people are more concerned with maintaining existing organizations than with maximizing organizational performance" (Meyer & Zucker, 1989, p. 23).

Researchers must be willing to state clearly what criteria they propose to employ; whatever those criteria are and whoever exposes them, they are always normative conceptions, serving some interests more than others, and likely to be both limited and controversial (Scott, 1998, p. 349).

New Quality Paradigm

The Total Quality Management (TQM) movement founders—W. Edwards Deming, Joseph Juran, and Kaoru Ishikawa—have been hailed as providing a unique approach to improving organizational effectiveness. TQM has been described as having a solid conceptual foundation and offering a strategy for improving performance that takes account of how people and organizations actually operate (Hackman & Wageman, 1995; Wuruck & Jensen, 1994). The shared view of Deming, Ishikawa, and Juran is that an organization's primary purpose is to stay in business so that it can promote the stability of the community, generate products and services that are useful to customers, and provide a setting for the satisfaction and growth of organization members (Hackman & Wageman, 1995). The TQM strategy for achieving its normative outcomes is rooted in four interlocked assumptions—about quality, people, organizations, and the role of senior

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management. Prominent in Deming's writing is that producing quality products and services is not merely less costly but, in fact, is essential to long-term organizational survival (Deming, 1993, pp. xi—xii).

The movement's second assumption is that human beings exhibit an intrinsic drive for precision, beauty, and perfection when provided with a hospitable climate. An organization should remove fear from its system. Punishment for poor performance, appraisal systems that involve the comparative evaluation of employees, and merit pay should be abolished (Deming, 1986, pp. 101-108; Ishikawa, 1985, p. 26).

The third assumption is that organizations are systems of many interdependent parts. There is no unified approach to organizational analysis. Deming and Juran insisted that cross-functional problems be resolved collectively by representatives of all relevant functions (Deming, 1993; Juran, 1969). By contrast, Ishikawa argued that cross-functional teams should not set the overall direction but that each team should set its own goals (Ishikawa, 1985, pp. 116-117).

The final assumption has to do with senior management's responsibility. The quality improvement process must begin with management's commitment to total quality. Employees' work effectiveness is a direct function of the quality of the systems that managers create (Deming, 1986; Ishikawa, 1985; Juran, 1974).

The emergence of TQM has created a change in the ways that many individuals in organizations think and talk about organizational effectiveness. The notion of effectiveness has begun to be displaced by an emphasis on quality. In earlier formulations, quality referred to reliability or durability. The modern view of quality encompasses a wide range of attributes, from waste reduction to partnering with suppliers

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and customers, to human resources and management. Three values are uppermost in the new quality paradigm: (a) customer focus, including "internal" customers; (b) continuous improvement, as replacing the old "conformance to standards"; and (c) teamwork, as a breaker of barriers and buffers that has been erected in traditional organizations.

Scott (1998) noted three themes that are pervasive in the new TQM paradigm: collaboration, organizational learning, and full participation of all employees (p. 350). Modern organizational theorists argue that organizational learning is required for organizational effectiveness (Argyris, 1978; Dixon, 1997; Fulmer & Keys, 1998; Senge, 1990; Tottenbaum, 1998).

TQM is largely consistent with management theory in several areas (Astley & Zammuto, 1992; Dean & Bowan, 1994; Scott, 1998). These include top management leadership and human resource practices such as employee involvement, the use of teams, training needs analysis and evaluation, and career management.

In assessing the new quality paradigm that emphasizes customer focus, continuous improvement, and teamwork, Dean and Bowen (1994) offered the following implications for practice:

1. Managers should beware of over-reliance on formal analysis of information, especially in ambiguous and political settings.

2. Strategy formulation should include careful assessment of organizational strengths and weaknesses, not just customer expectations.

3. Selection should play a bigger role among human resources practices in organizations practicing TQM, especially with respect to assessing person-organization fit.

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4. Customer-supplier relationships and employee involvement and empowerment initiatives should be designed using a contingency approach rather than by assuming there are universally appropriate solutions (Dean & Bowen, 1994).

Sitkin, Sutcliffe, and Schroeder (1994) pointed to the duality inherent in the underlying goals of TQM: the desire for control and the desire for learning. They conceptualized the three guiding TQM precepts (customer focus, continuous improvement, and teamwork) as having two components: Total Quality Control (TQC) and Total Quality Learning (TQL). In building their uncertainty-based contingency perspective on TQM effectiveness, Sitkin et al. (1994) suggested that when uncertainty is low, the assumptions and practices associated with a TQC approach make sense. In contrast, when uncertainty is high (for example, because the organization is engaged in novel or complex efforts), the only reasonable goal may be to try to do a good job of exploration and learning through a TQL approach (p. 554). Waldman (1994) considered a system-focused perspective with regard to the determinants of work performance. The system is seen as an important source of variance affecting performance both directly and interactively. Moreover, the individual is seen as potentially attracting the system.

Prior research attempting to predict performance behavior has been criticized for being too narrow in focus and involving too few dependent variables (Blumberg & Pringle, 1982; Griffin, Welsh, & Moorhead, 1981; Staw, 1977; Waldman & Sprangler, 1989). A primary focus of Blumberg and Pringle's (1982) model was to explicitly include opportunity factors, or environmental influences beyond an individual's control, as determinants of performance. Waldman and Sprangler (1989) developed a new construct grounded in the resource-based view of the firm and manufacturing strategy. The authors

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found that a firm's investment in environmental technologies significantly affected both the manufacturing and the environmental performances for a sample of manufacturing plants.

Early models of work performance (Cummings & Schwab, 1993; Dachler & Mobley, 1973; Porter & Lawler, 1968) tended to focus on individual ability, whereas motivation determinants and opportunity factors were treated as extraneous. Even more recently, Campbell (1990) omitted opportunity factors in his work performance model by simply assuming that they can be held constant.

Campbell (1990) described work performance as contingently tied to rewards and other forms of performance, such as organizational citizenship behavior; as discretionary, not formally recognized by organizational reward systems; and as more geared toward efficiency groups and organizational effectiveness (Moorman & Blakely, 1993). Moorman and Blakely described a total quality culture in terms of norms, values, and rewards procedures that emphasize holistic behavior oriented toward cooperation with fellow organizational members.

Rutledge (1997) asserted that criteria should not be designed to measure the performance of one organization against another. He suggested that an organization should avoid being blind-sided by a competitor but should focus entirely on the absolute level of quality that it delivers to the customer.

Measuring Organizational Effectiveness

Steers (1977) came up with 14 criteria for measuring organizational effectiveness, compiled from his study of 17 models of organizational effectiveness: adaptability-flexibility, productivity, satisfaction, profitability, resource acquisition, absence of strain,

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control over environment, development, efficiency, employee retention, growth, integration, open communications, and survival (p. 46). Steers tried to fit these criteria into organizational characteristics, environmental characteristics, employee characteristics, and managerial policies and practices. He suggested, in view of the lack of agreement on evaluation criteria, that any attempt to evaluate the current level of effectiveness of an organization must be preceded by a careful analysis of the possible constraints or sources of error in such evaluation attempts (p. 176).

Scott (1998) argued that evaluation criteria must be predefined, and the level of analysis and the time perspective must also be stated (p. 345). He outlined three measures that can be used to evaluate effectiveness: outcome, process, and structure indicators (pp. 354-358). The criteria used in evaluating organizational effectiveness would depend on the organizational model. For a rational, natural, open-system organization, multiple criteria must be developed.

Under a rational system model, organizations are viewed as instruments for attaining goals (DiMaggio & Powell, 1991; March & Simon, 1958). The criteria emphasized focus on the number and quality of the output and the economies realized in transforming inputs into outputs. In the rational model, general criteria include measures of output and of quality, productivity, and efficiency (Anderson, Rungtusanathan, & Schroeder, 1994; Perrow, 1991; Scott, 1977).

The natural system analysts insist on adding a set of support goals to the output goals emphasized by the rational system model. Organizations are governed by the overriding goal of survival. The natural system model presumes the existence of certain needs that must be met if the system is to survive. Direct attention to discovering the

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mechanisms by which these needs are satisfied is also presumed. The criteria generated by this conception include measures of participant satisfaction and morale. In comparing the natural and the rational system models, Lawrence and Larsch (1967) concluded, "In simplified terms, the classical (rational system) theory tends to hold in more stable environments, while the human relations (natural system) theory is more appropriate to dynamic situations" (p. 183).

In the open system, criteria such as profitability, defined as the excess of returns over expenditures (Gerbert & Boerner, 1999), are emphasized. Many theorists, including Weick (1977), emphasize the importance of adaptability and flexibility.

Process Measure of Effectiveness

The process measure of effectiveness will be presented here in order to highlight its strengths and weaknesses. The reasons why this measure is the choice of most contemporary researchers on organizational effectiveness will be provided.

Steers (1977) presented three dimensions of the process model: the notion of goal optimization, a systems perspective, and an emphasis on human behavior in organizational settings (p. 176). Steers suggested that assessments concerning the relative success or failure of a particular organization should be made against organizational intentions instead of against the investigator's value judgements. Steers further suggested that goal optimization is a vehicle by which multiple and conflicting goals are balanced so that each goal receives sufficient attention commensurate with its importance to the organization. A systems perspective emphasizes the importance of organization-environment interactions.

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In explaining the behavioral emphasis aspect of the process model, Steers (1977) noted the importance of discussing the relationship between what employees want and what organizations want. If an organization's employees agree with their employer's objectives, their effort toward those objectives should be high. If, on the other hand, the organizational objectives are largely inconsistent with employee needs and goals, their effort can not be assumed (Steers, 1977, pp. 176-177).

Scott (1998) discussed the problems encountered in establishing construct validity, stability criteria, time perspective consensus, measurement precision, and generalizability in assessing organizational effectiveness.

> The criteria for evaluating organizational effectiveness cannot be produced by some objective, apolitical process. They are always normative and often controversial, and they are as varied as the theoretical models used to describe organizations and the constituencies that have some interest in their functioning. We should not seek explanations for organizational effectiveness in general, since the general criteria are not available, and we must be cautious in celebrating the truism that organizations that are better adapted to their environments are more effective. (Scott, 1998, p. 363)

Process measures are based on the assumption that it is known what activities are required to ensure effectiveness. Empowering teams and working in collaboration (Kirkman & Rosen, 1999; Manz, 1993), the culture of free communication that breaks barriers across hierarchies and across departments (Fitz-enz, 1997), the culture of customer focus and continuous improvement (Dean & Bowen, 1994; Kanter, 1983), and the practice of ensuring quality in every step of the production line (Deming, 1986) are some of the indicators.

Anderson, Rungtusanathan, and Schroeder (1994) outlined the concepts underlying Deming's process management method as a set of methodological and behavioral practices emphasizing the management of process, or means of actions, rather

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than results. "This is exemplified by management of processes, prevention orientation, reduction of mass inspection, design quality statistical process control, understanding of variation, eliminating of merit-ranking reward systems, understanding motivation, total cost accounting, and stable employment" (p. 480). Anderson et al.(1994) identified the concepts underlying the Deming management method as visionary leadership, internal and external cooperation, learning, process management, continuous improvement, employee fulfillment, and customer satisfaction (p. 480).

Kirkman and Rosen (1999) noted that team empowerment creates potency, meaningfulness, autonomy, and impact. They concluded that the performance outcomes for such organizational behavior are productivity, proactivity, and good customer service; and the attitudinal outcomes are job satisfaction, organizational commitment, and team commitment (p. 63).

The constraints in the process approach include the fact that gathering information on work processes is both problematic and expensive. The need to rely on self-reports may provide data that are likely to be both biased and incomplete representations of work processes (Dornbusch & Scott, 1975, pp. 145-162).

Outcomes Measure of Effectiveness

The outcomes measure of effectiveness is not always a reliable measure. The problem posed by variations among input characteristics affecting variations in outcomes experienced is not easily resolved. Organizations do not have access to the same supply sources. As a matter of fact, one of the principal ways organizations vary is in the amount and quality of inputs they are able to garner. The pattern of inputs and outputs characterizing various types of organizations is not simple. For example, it is known that

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prestigious universities recruit highly intelligent students, as indicated by scores on standardized tests or past performance in academic settings, while less highly regarded colleges accept higher proportions of the less qualified students. Teaching hospitals focus primarily on patients with problems that pose some challenges, as opposed to general hospitals that treat less complex illnesses. In situations such as these, statistical techniques are employed by analysts to adjust outcome measures in light of differences in characteristics of input (Flood & Scott, 1987; Heithoff & Lohr, 1990; Mann & Yett, 1968).

Still other issues are involved in the use of outcome measures to assess organizational effectiveness. In situations such as treating patients in hospitals and turning out graduates from colleges. Scott (1998) argued that it is difficult to determine the appropriate timing for such measures. Some organizations insist that their performance may not be apparent for a long time. Also, organizations have little or no data on outcomes achieved; they quickly lose contacts with their "products," whether these are human graduates or manufactured commodities. The collection of relevant outcome data can become very costly indeed (Scott, 1998, p. 356).

For manufacturers of standardized equipment in competitive markets, outcomes serve as safe indexes of quality and quantity of organizational performance. However, many organizations lack such controls over their work processes and task environments. For example, a patient's medical condition following surgery is a function of the hospital personnel's performance, the state of medical science with respect to the condition treated, as well as the patient's general physical condition and extent of disease at the time of operation. Consequently, some analysts dismiss the attempt to use outcome

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measures to assess effectiveness under these circumstances. Mann and Yett (1968), for example, reasoned, "We reject this definition of hospital output for the same reason that we do not regard the output of a beauty salon as beauty" (p. 197).

Structures Measures of Effectiveness

Structural indicators focus on organizational inputs as potential measures for outputs. Economists warn that quality of outputs should not be confused with quality or cost of inputs. In this approach, the value and age of their machine tools may be used to assess manufacturing organizations, and schools are assessed by the qualities of their faculties measured in the types of degrees acquired, and by such features as the number of volumes in their library.

Some observers have suggested that emphasizing structural measures may have detrimental consequences for quality of outcomes. For example, Tancredi and Woods (1972) argued that personnel licensure requirements have become a major obstacle to innovation in work procedures and to optimally deploying workers. The implication here is that employee's qualifications do not necessarily produce the anticipated outcomes. Nor does the availability of better facilities imply a superior outcome.

Summary

It has been shown here that organizational practices are determined, among other things, by organizational goals and the culture—political, social, and economic—in which the organization is situated. The contingency theory of management has been cited as relevant in determining the effectiveness of the Nigeria's Ajaokuta Steel Company. An

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attempt was also made to show that in order for an organization to be successful in the 21st-century global economy, it must attain world standards.

The criteria for evaluating effectiveness must be predefined, and the level of analysis and the time frame must be stated. For a rational, natural, and open system model, multiple criteria must be developed. In this model, multivariate measures of adaptability-flexibility, productivity, job satisfaction, profitability, and resource acquisition have been suggested (Campbell, 1977; Steers, 1977).

In recent times, the concept of effectiveness is gradually being displaced by an emphasis on "quality." This change is largely related to the emergence of the Total Quality Management (TQM) movement. In the TQM paradigm three themes are pervasive: collaboration, organizational learning, and an emphasis on work processes. This is consistent with the effectiveness construct: the ability of an organization to mobilize its centers of power for action-production and adaptation.

In order to determine a quantitative measure of effectiveness, a case was made for the process measure of effectiveness over outcomes and structures measures.

The positive effects of collaboration, innovation, competence, critical alliances and connections, institutional supports, and motivation have been touched on in this discussion. Also required in attaining organizational effectiveness are the practices of employee involvement in decision making, team empowerment, commitment, reward for good performance, and organizational learning. Another trait that has been discussed is a corporate culture of free communication and trust. Organizational behavior traits largely determine effectiveness in modern organizations; the traits constitute the premise on which the research instrument for this study is based. These traits, which have been used

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in this research, conform largely with normative and descriptive principles for attaining organizational effectiveness.

In the next chapter, the method of study will be presented. It will include the study's design, research hypotheses, the population and sample of the Ajaokuta Steel Company, the data collection procedure, and the analysis and statistical procedures.

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CHAPTER 4: RESEARCH METHOD

Design of the Study

This was an exploratory case study of the Ajaokuta Steel Company in Nigeria. A case study is an opportunity for relating facts and concepts, reality and hypotheses. A case study draws its unity from the way it takes shape, namely as a social or historical fact, combining all sorts of elements into a set comprising social roles, an institution, a social movement, or a logic of community action (Coleman, 1986; Morgan, 1983; Wieviorka, 1992). Wieviorka (1992) noted that scholars adopt one of two approaches to a case study:

> 1. A case may serve to signal the presence, in historical experience or particular characteristic that the social scientist wants to bring to light and that constitutes an analytical category. 2. A scholar's viewpoint may no longer be aligned with a sociological perspective. He may examine a case, not in order to discover an elementary analytical category nor to see what theoretical structure it can be used to build or consolidate, but to learn what it teaches concretely about reality defined from the outset as a complex synthesis. (p. 161)

The Ajaokuta Steel Company (ASCO) is the focal organization in this study. Data collected from two other organizations—the Federal Ministry of Works and Housing, Ilorin (FMW&H) and Negris—were used for the purpose of establishing validity of the questionnaire instrument.

In view of the complex characteristics of Ajaokuta and a lack of any extensive documentation on the organizations' performances in Nigeria, this researcher's approach was exploratory, leaning more towards Wieviorka's second approach.

This research methodology was both qualitative and quantitative. A quantitative evaluation of the Ajaokuta Steel Company's effectiveness was sought. The final qualitative analysis was influenced by

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1. results of the quantitative analysis,
2. information collected from interview sessions, and
3. environmental features and data about Ajaokuta.

Dependent and Independent Variables

The quantitative component of this research adopted the process measure of effectiveness. The quality of products and services depends most of all on the processes by which they are designed and produced (Deming, 1986; Ishikawa, 1985; Juran, 1974). These three founders of the Total Quality Management movement have declared that improving work processes is key to high quality products and services. The TQM normative change principles, as formulated by Juran, Ishikawa, and Deming, since 1986 have focused on work processes.

The process model emphasizes the major processes related to effectiveness, instead of looking at effectiveness as an end state. The process model implies that the role of the management is to understand how the various components of the organization are interrelated and how such interrelationships enhance the likelihood of organizational success. The adoption of this model results from the property of the model (discussed in the previous chapter) that captures (a) the notion of goal optimization, (b) an open system perspective, and (c) an emphasis on human behavior in organizational settings.

Many organizational management theorists and authors (Kotter, 1999; Peters & Waterman, 1982; Schefezyk & Gerpo, 1998; Swanson, 1998; Zimmerer & Yasin, 1999) have adopted the process model of effectiveness in their evaluation. Also, since the ultimate purpose of measuring organizational effectiveness is to effect needed changes in how jobs are carried out, the process model offers the most direct approach. The process

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models of effectiveness use indicator variables that are normative or prescriptive in nature, attempting to specify what organizations must do in order to be effective. Other indicators are largely descriptive in that they simply summarize the characteristics that have been found to exist in successful organizations.

Although a wide array of evaluation criteria have been employed, the most widely used by researchers (Cameron & Whetton, 1983; Campbell, 1977; Steers, 1977) include the following:

1. Adaptability—flexibility
2. Productivity
3. Job satisfaction
4. Profitability
5. Resource acquisition

Adaptability/Flexibility

Adaptability is the ability of an organization to change its organizational routine in response to environmental changes (Scott, 1998; Steers, 1977). Flexibility refers to changes in routinized organizational processes that involve temporary responses to unpredictable changes in the environment (Steers, 1977). Ajaokuta must continually direct its strategies towards the society's changing needs and requirements. The organization must also be flexible in carrying out work processes.

When societal needs with respect to an organization's products are reduced, the options open to a manufacturing firm include downsizing, requiring a reduction in the number of employees, or diversification, requiring the organization to go into other businesses (Davis, Diekmann, & Tinsley, 1994). Downsizing disrupts existing social

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networks in organizations. A firm's postlayoff success is contingent upon reactions of the people in the surviving workforce. Negative survivor reactions can diminish the intended benefits of a layoff (Shah, 2000). Restructuring or reengineering involves moving, shrinking, or eliminating units (Kendel, 1994).

Productivity

Productivity is the quantity or volume of the major product or service an organization provides (McCormack, 1995; Ross, 1977). Productivity is the quality and quantity of products, and the efficiency (the cost per output ratio) involved in production (Steers, 1977). Productivity can be measured at three levels: individual, team, and total organization. Ajaokuta would be rated as productive at the organizational level if it consistently produced quantities of steel that are within a reasonable range of the mills' design capacity.

Job Satisfaction

Satisfaction at work can be defined as the degree of contentment felt by an employee toward his or her organizational role or job. It is the degree to which individuals perceive they are equitably rewarded by various aspects of their job situation and the organization to which they belong (Steers, 1977).

A work climate and reward system that produces minimal turnover, minimal employee absenteeism, and a general employee cooperation with Ajaokuta management would suggest high levels of job satisfaction. Employee empowerment, involvement in decision-making, motivation, growth opportunities, and minimized frustration are likely to provide job satisfaction to employees (Katzenbach, 1996).

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Profitability

Profitability, at any level of output, is the difference between the costs of producing and marketing the output and the revenue from selling the output (Lloyd, 1967). Profitability is the excess of returns over expenditures (Gerbert & Boerner, 1999). Government companies in Nigeria, including Ajaokuta, are deemed effective as long as they continue to produce, continue to provide employment to the public, and remain in business without needing governmental subsidies.

Like productivity, profitability is a rational goal. The natural and open aspects of profitability have to do with how the management relates to employees and how the organization, in general, interacts with external constituents. The extent to which managers perceive the company's goals as their own greatly affects the company's profitability. To the extent that individuals at the management level of an organization are eager to enrich themselves, profitability becomes less likely.

The cost of obtaining the required raw materials for production directly affects the excess of returns over expenditure when the prices of the products must be set within established limits. The availability of the bulk of needed raw materials in the locality would reduce the cost of procurement thereby reducing expenditures. In a developing economy, government often sets the prices of its products in the parastatal firm in the attempt to make the products affordable to the masses. Such control of product prices often disregards the changes in expenditures and thereby limits profitability. In Nigeria, the communication systems, especially the postal services, are highly unreliable. The need to travel long distances to deliver to, and receive items or information from, other agencies contributes to expenditures, thereby reducing profitability. Nonfunctional

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telephone and electrical power systems, as they often occur in Nigeria, provide the tendency for decreased productivity and profitability.

Employee's negative behavior in Nigeria's government firms include equipment canibalization. Frequent replacements of stolen equipment parts force expenditures up, thereby reducing the organization's profit. Other factors that directly affect an organization's profitability, in Nigeria and in most of the African nations, include the participants' commitment and competence. Incompetent participants—employees and suppliers—often cause delays and are necessarily inefficient. In Nigeria it is also not unusual that uncommitted parastatal company leaders divert part of the firm's returns to their own accounts, thereby reducing the organization's profit. All these indicators, which are unique to similar organizations in the developing world, affect the rational purpose for which the organization was created.

Resource Acquisition.

Resource acquisition is the extent to which an organization successfully interacts with its environment, acquiring scarce, valued resources necessary to its effective operation. This is the degree to which an organization acquires a steady supply of manpower, financial resources, equipment, and raw materials (Steers, 1977; Williams, 1994).

The acquisition of natural, capital, and human resources must be an aggressive pursuit in order for Ajaokuta to be successful as an organization. The key raw materials for the manufacturing of steel—namely, iron ore and coking coal—are available in vast quantities within Nigeria. Proper connections and alliances must be established with various government representatives and agencies. A strategy to ensure that the imported

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raw materials are always available hinges on management's competence in understanding the bureaucratic process. Since the construction stage is still on, management must establish credibility for itself to enable the Minister of Power and Steel to provide needed capital.

Leadership is crucial to organizational success. An organization is more likely to succeed if the leader knows the business well (Zimmerer & Yasin, 1998). The criteria for selecting the general manager of Ajaokuta must include the prospective leader's basic knowledge of steel production. It is little wonder that Ajaokuta has achieved very limited success over the years; only a few of the eight chief executives that have occupied this position had any understanding of the steel production process.

In this case study, the five variables—adaptability, productivity, job satisfaction, profitability, and resource acquisition—that constitute Steer's (1977) highest priority multivariate measures were used. The independent variables, comprising 48 structured statements, were composed to fit into Steers (1977)'s four effectiveness-related variables. Steers's framework complies with research outcomes from various institutional settings. They suggest that all four of the following areas play an important role in facilitating an achievement-oriented work environment:

1. Organizational characteristics, including structure and technology.

2. Environmental characteristics, internal and external to the organization.

3. Employee characteristics, requiring the recognition of individual differences.

4. Managerial policies and practices, including strategic goal-setting, resource acquisition and utilization, performance environment, communication processes, leadership and decision making, and organizational adaptation and innovation.

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Organizational Characteristics

Organizational structure and technology can influence effectiveness in a variety of ways. For example, it has been found that improved productivity and efficiency often result from increases in functional specialization, organizational size, centralization of decision making, and formalization. Productivity and efficiency tend to be positively related to these structural variables; job satisfaction and commitment tend to be inversely related to them. Also, technological variations interact with structure to influence organizational success (Steers, 1977, p. 178). The organizational structure of the Ajaokuta Steel Company, showing its 8 divisions, is represented in Figure 1.

This chart depicts a one line command structure, as opposed to the matrix structure whose hallmark is its multiple command structure. Ideally an organization structure should conform with the demands of its job tasks. "The greater the technical complexity, the greater the structural complexity" (Scott, 1998, p. 230).

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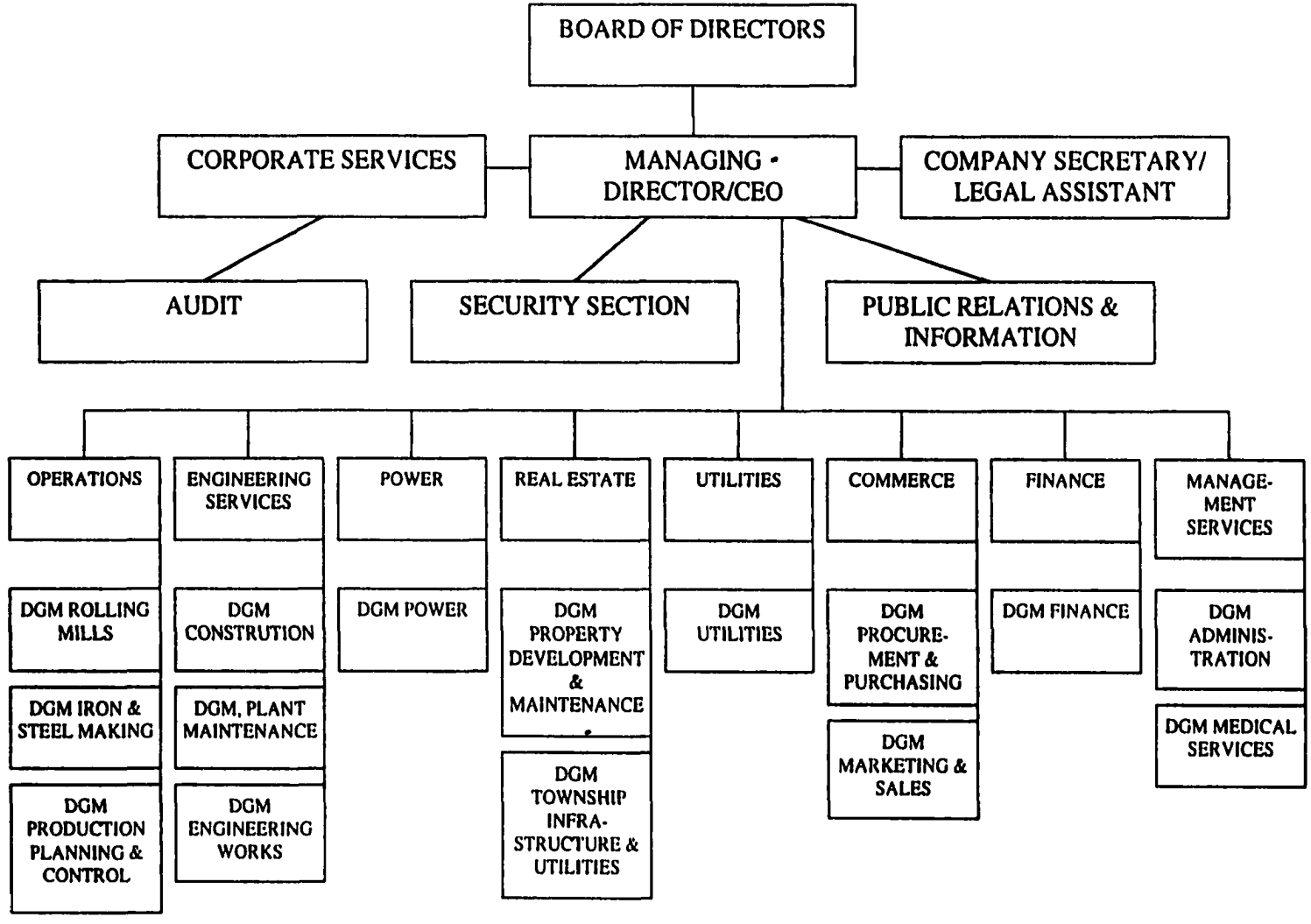

Figure 1. Organizational structure of Ajaokuta Steel company (2000).

Managers are responsible to identify clearly their basic objectives and to recognize the effects that structural variation aimed at those objectives will have on employees' attitudes and behavior. Structure and technology are to be consonant; the working together of structure and technology will help minimize problems encountered by employees in their efforts.

Environmental Characteristics

The success of organization-environment relations is largely dependent on three key variables: (a) the accuracy of perception of environmental states, (b) the degree of predictability of environmental states, and (c) the degree of organizational rationality (Campbell, 1977; Scott, 1998). As part of the community and society, the business firm is influenced, and even governed, by the culture and by order in the environment. These three factors influence the appropriateness of organizational responses to environmental changes. The success of an organization's adaptation is a direct function of its response. There is thus a need to continually monitor environmental changes through market and economic research, through legal advice, and by political activities. Organizational design, technology, objectives, and behavior must be responsive to such changes.

In general, the most suitable climate for facilitating goal-directed behavior is characterized by an achievement orientation and employee centeredness (Argyris, 1978; Dean & Bowen, 1994; Scott, 1998; Steers, 1977). The external environment represents the milieu in which an organization attempts to secure resources and distribute its outputs, while the internal environment or climate represents the cultural and social milieu where the employee behavior is largely determined.

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Employee Characteristics

The members of an organization probably represent the greatest influence on effectiveness because their behavior eventually determines the degree of organizational effectiveness. The organization must recognize human variation since different employees respond in different ways to attempts by management to secure goal-directed effort. The organization must integrate personal goals with organizational objectives.

Managerial Policies and Practices

Steers (1977) identified several specific mechanisms by which managers can improve organizational effectiveness, including strategic goal setting, efficient resource acquisition and utilization, creating a performance environment, communication processes, leadership and decision making, and organizational adaptation and innovation. Since effectiveness is concerned with management's capacity to secure and apply resources toward attaining organizational goals, selecting both operative and operational goals emerges as a critical factor. The notion of goal setting includes both identifying organizational purposes and determining how the various departments, teams, and individuals can contribute toward such purposes. Mutual support on goals among employees provides a high probability of success for goal efforts.

In order to effect efficient resource acquisition and utilization, three related areas of concern are necessary:

1. Integrating and coordinating the various subsystems of the organization (i.e., productive, supportive, maintenance, adaptive, and managerial) so that each subsystem has the needed resources to carry out its principal tasks.

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2. Implementing and maintaining policy guidelines that ensure the organization benefits from past decisions and actions and that it minimizes wasted energy or overlapping functions within departments.

3. Installing a series of feedback and control loops that keep the organization on target toward its goal (Steers, 1977).

In designing a performance environment, management's concern includes directing attention toward the following: (a) employee selection and placement procedures, (b) employee training and development, (c) task design, and (d) performance appraisal and rewards (Peters & Waterman, 1982; Steers, 1977).

The negative consequences of communication distortion, omission, overload, untimeliness, and nonacceptance have been extensively studied (Fulmer & Keys, 1998b; Haskins et al., 1998). An approach to minimizing these problems is to recognize that communication in organizations, as in anywhere else, is an evolutionary process. Open communication must be developed over time through a variety of upward, downward, and horizontal communication strategies. As information-gathering and information-sharing activities increase, uncertainty and anxiety are reduced and the quality of decisions is improved.

The role played by leadership and decision-making processes in organizational behavior is central. Participative decision making affects how decisions are accepted. Allowing employees greater involvement in decisions affecting their jobs serves to (a) clarify organizational expectations as well as the potential rewards of successful performance, (b) increase the psychological commitment employees have to carrying out

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decisions in which they had a part, and (c) increase the effect of social influence on behavior (Legge, 1995; Storey, 1992).

Paying greater attention to the initial selection and placement of managers can improve the quality of leadership effectiveness. Also, evidence suggests that managerial training can improve the quality of leader behavior (Argyris, 1993; Senge, 1990; Watson, 1998). Third, reward systems for managers can be structured so that they foster goal-oriented leader behavior. Finally, in those cases where attitudinal and behavioral changes seem unlikely, structural changes may be necessary.

Organizational adaptation and innovation have been seen by many as the hallmark of effectiveness itself (Ansoff, 1979; Deming, 1982; Kanter, 1983; Peters & Waterman, 1982). The question for contemporary management experts is not whether change is necessary but how best to effect such changes. The notion of "equifinality" stipulates that there is often more than one way to achieve a specific goal. Managers must examine carefully the approach they select for meeting a particular problem. The examination must anticipate cost-benefit ratios to be incurred in the various solutions.

The contingency theory applied to organizations stipulates that an organization that is well adapted to its environment is effective. Galbraith (1973) stated two assumptions underlying contingency theory: "There is no one best way to organize, and any way of organizing is not equally effective" (p. 2). Scott (1998) added a third assumption: The best way to organize depends on the nature of the environment to which the organization relates. Managers must recognize the uniqueness of their own organizations with respect to goals, structures, technologies, people, and environment in order to respond in a way consistent with that uniqueness.

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Proponents of contingency theory posit that performance is a function of matching organizational elements to environment. It follows that managers' accurate perception of the environment is a necessary prerequisite for the organization to successfully match its structure. Based on a review of previous theoretical and empirical research on environmental measurement, Boyd, Dess, and Rasheed (1993) developed a framework to explain the causes and consequences of divergence between archival and perceptual measures of the environment. They distinguished two measures. Typically, objective environmental measures rely on archival sources and include indicators such as growth in industry sales and concentration ratios, while perceptual environmental measures entail the subjective judgments of the environment by organization members or key informants. The authors labeled as Type I error the situation of an uncertain perceived environment and a certain objective environment. A firm misperceives the environment and develops unnecessary resources to monitor the environment and develop a strategy. The authors' Type II error refers to a certain perceived environment and an uncertain objective environment. Consequently, the firm misperceives the environment, and its survival is threatened by competitive, technological, and regulatory change.

Sitkin, Sutcliffe, and Schroeder (1994) noted that the core of most definitions of uncertainty is the idea that information is incomplete (p. 539). Boyd, Dess, and Rasheed (1993) argued that, in general, archival measures are best suited for measuring outcomes, while studies of firm processes would benefit most from the use of perceptual measures (p. 221). Many organizational theorists agree that, in general, information processing is key to organizational effectiveness (Daft & Weick, 1984; Smith & Grimm, 1987).

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Multivariate Effectiveness Measures

This study measured five facets of organizational effectiveness:

- Adaptability-flexibility
- Productivity
- Job satisfaction
- Profitability
- Resource acquisition

Research Theory

Viewing effectiveness in terms of goal attainment, March and Simon (1958) argued that definitions of organizational success must consider not only organizational objectives but also the mechanisms by which an organization maintains itself and pursues its objectives. Since this initial effort, several multivariate models have been proposed to explain the dynamics of organizational effectiveness (Hirsch, 1972; Simon, 1964; Yuchtman & Seashore, 1967). Included among the dimensions on which these approaches can be compared are (a) the primary evaluation criteria used in the models, (b) the normative and descriptive indicators, (c) the validity of the indicators, and (d) the bases for determining the indicators (Campbell, 1977; Steers, 1977).

Primary Evaluation Criteria

As indicated above, the dependent variables in this study were adaptability, productivity, job satisfaction, profitability, and resource acquisition. Research on

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organizational effectiveness has shown that the evaluation criteria, although related, are still distinct components of effectiveness (Campbell, 1977; Friedlander & Pickle, 1968).

Indicators

The bases for selecting the process indicators were established in the literature review. The focus of these measures is on the quantity or quality of activities carried on by the organization. Process measures are based on the assumption that it is known what activities are required to ensure effectiveness (Scott, 1998; Suchman, 1967). Several indicators may be formulated from the four independent variables—organizational characteristics, employee characteristics, environmental characteristics, and managerial policies and practices.

Validity of the Indicators

When managers and researchers are considering appropriate criteria to evaluate effectiveness, specific questions need to be raised concerning how such criteria are to be measured; attempts must be made to identify criteria that can be measured with a minimum of error (Steers, 1973; Weick, 1977).

In designing a research questionnaire, the focus must be on the environment; appropriate language must be used to obtain correct and true information from participants. The question of external validity, that is, the extent to which the models are valid or applicable in other organizational settings, is of great concern to researchers (Child, 1972; Scott, 1998).

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Bases for Determining Indicators

The framework employed here identified four sets of effectiveness-related independent variables: (a) organizational characteristics, (b) environmental characteristics, (c) employee characteristics, and (d) managerial policies and practices. Recent research from a variety of institutional settings suggests that all four of these areas play an important role in facilitating an achievement-oriented work environment (Ansoff, 1979; Deming, 1986; Kanter, 1992).

Hypotheses

In order to address the problem and the research question, the following hypothesis were formulated:

Hypothesis 1: The five dependent variables of organizational effectiveness—adaptability and flexibility, productivity, job satisfaction, profitability, and resource acquisition—are distinct but related.

Hypothesis 2: Ajaokuta is ineffective in its organizational behavior and practices.

Hypothesis 3: The lack of success at Ajaokuta has occurred because its organizational behavior and practices did not match the rational, natural, and open system model of organizational management.

Instrument

The instrument comprised 48 structured statements that addressed four areas:

1. Organizational characteristics, including its structure and technology.
2. Environmental characteristics, internal and external to the organization.
3. Employee characteristics, requiring the recognition of individual differences.

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4. Managerial policies and practices, including strategic goal-setting, resource acquisition and utilization, communication processes, leadership and decision making, and organizational adaptation and innovation.

The questionnaire was based on normative and descriptive indicators of organizational effectiveness. Theoretically based practices designed to influence effectiveness along with those practices of the most effective organizations were incorporated into the questionnaire. Questions used by several authors (Coyle-Shapiro, 1999; Frese, Kring, Soose, & Zempel, 1996; Slocombe & Bluedorn, 1999; Zimmerer & Yasin, 1999) helped the researcher design items that focused on the independent variables. Environmental circumstances influenced the nature and wording of the questions but without a loss of focus on the effectiveness construct itself. Respondents were asked to respond to the 48 statements through the application of a traditional 5-point Likert scale.

The Likert scale is a simple categorization of responses named after its inventor, R. Likert. Here, the researcher codes the responses to one of five mutually exclusive and exhaustive categories. Typical Likert categories are as follows:

- Strongly agree (with a particular statement)
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

By using the Likert scale and the mean and standard deviation as descriptive statistics to determine organizational behavior, researchers (e.g., Slocombe & Bluedorn,

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1999; Zimmerer & Yasin, 1999) have treated the Likert categorization as an interval scale. An interval scale assumes that a fixed unit of measurement is being used that has meaning regarding the measured characteristic. The "agreement number" within the Likert scale of 1 to 5 represents the intensity of the characteristic being measured. In using the Likert scale as an interval, continuity is assumed in the domain of 1 to 5. Further, those whose scores differ by a stated numerical amount on the scale differ by a proportionate quantity of the characteristic being measured. Researchers employing the mean and standard deviation as descriptive statistics for Likert scale categorization have assumed continuity in the scale domain. In addition, they have assumed that differences on the Likert scale are in proportion with the variable characteristic being measured.

Population and Sample

In presenting a formal model of data collection, Scott (1998) concluded that the most important rule for all data collection is to report how the data were created and how they came to be possessed. Measurement accuracy, however, requires population representativeness. The sample in this study included the employees at all levels and across all departments of Ajaokuta.

Respondents were picked at random; the probability of any one being included in the sample was equal to the probability of including any other. The selection was also stratified in the sense that the distribution of the questionnaires were based on an approximate population ratios in departments and in organization hierarchies.

Establishing Validity

The same questionnaire was offered to two organizations in Nigeria. One of them is perceived by the Nigerian community to be highly effective in its performance and

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general impact on the environment. Among its task domains, Negris Limited services gas turbines and pumps in the oil drilling and oil refinery regions of Nigeria. With its headquarters in Lagos, Negris Limited has field offices and engineering sites at Warri, Port Harcourt, and Kaduna, all in Nigeria. This organization is a private organization owned by Nigerians. The growth rate of this organization, employee satisfaction, productivity, profitability, and resource acquisition that have been achieved in its 25 years of existence have been considered outstanding.

Participants drawn from across the ranks of Negris Limited were asked to respond to the questionnaire. Participants drawn from across another organization, whose level of effectiveness has been viewed by the Nigerian public to be in contrast with that of the Negris Limited, were asked to respond to the same questionnaire. An independent analysis of the two sets of responses obtained from these contrasting organizations was aimed at establishing discriminant validity of the instrument. The other organization was the Federal Ministry of Works in Ilorin, Nigeria. Employees in this organization are far from being labeled enthusiastic workers. This public organization's performance is low and its impact on the community has continually decreased.

The means and the standard deviations representing the effectiveness measures for each of the five dependent variables were determined. These statistical analyses were done for each of the three companies. Appendix B, produced from the dependent variables' characteristics, and Appendix A summarize the analyses of these statistical measures. Outcomes comparisons were made in an attempt to establish validity. Reliability tests for the study's dependent variables were assessed by a Cronbach's alpha test for each of the five facets of effectiveness.

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Data Collection

During the month of August 1999, when this researcher traveled to Nigeria, visits were made to Ajaokuta, Ilorin, and Lagos. The purpose of the visits was to introduce the researcher's intentions to key officers of each company. In addition, at Ajaokuta Steel Company, formal interviews were conducted with the deputy general manager of production and the head of the Metallurgical Training Institute of the Ajaokuta Steel Company. Discussions centered on the work processes of this company.

In addition to the discussions this researcher had with each of the company's key officers, written instructions to the facilitators regarding completion of the questionnaire accompanied each delivery. An instructional letter to each of the facilitators is shown in Appendix C.

In their design of samples, Alreck and Settle (1995) noted that the main reason for sampling is economy. The authors cautioned that the sample must be selected properly, or it won't represent the whole. "It has to be large enough to meet the requirements for reliability—but not too large, or it will waste resources" (Alreck & Settle, 1995, p. 54).

After identifying the population and specifying a sample unit (ASCO population and the individual employee, in this case), a sample frame, necessary to identify the units to be surveyed, must be developed. It should be all-inclusive, so every unit in the population to be surveyed is included. The frame for the sample should exclude any units that are not part of the population being surveyed (Alreck & Settle, 1995; Kish, 1965).

In determining sample sizes, Alreck and Settle stated that there is some minimum sample size below which the data do not provide reliable results, and there is a point of diminishing returns, above which additional confidence is negligible. The confidence

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level can be expressed as the probability that a mean value in the population is within a specific, numeric range from the corresponding mean value computed from a sample. The authors noted, "There are maximum and minimum practical sample sizes that apply virtually to all surveys. . . . For a population of 5,000 units the minimum practical sample would be 100 or so; and the maximum would be approximately 500, or 10%"(Alreck & Settle, 1995, pp. 62-63).

For ASCO's population of 4,600 employees, 300 was considered a reasonable number. Three hundred questionnaires were sent to Ajaokuta, with the expectation that more than 50% of this number would be properly completed to provide usable data. This researcher did not believe that increasing the number of questionnaire forms would guarantee an adequate number of responses. The questionnaire was long and required a significant amount of company time.

To the two organizations that were used for the purpose of establishing validity of the questionnaire instrument, FMW&H and Negris, 200 copies each were sent. Employee population for these two organizations were about 600 and 700, respectively. Adequate usable responses were expected from the returns.

Three hundred copies of the research questionnaire were delivered to the facilitator for Ajaokuta, 200 copies to Ilorin, and 200 copies to Lagos. Participants were instructed to indicate their own opinions only in answering each question. Participants were told that this study was aimed at improving their company for their benefit and that this would only happen if the responses were honest. In addition, there would be no assumptions about any form of response, and only the researcher would keep records of the data. All surveys were filled out during company time, with the facilitators overseeing

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the completion. Each participant was to place the completed survey in a collection box located in a secure area. Facilitators were instructed to provide all the privacy that the participants needed once all instructions were read and understood.

As soon as the packages were delivered, phone calls were made in order to monitor progress in the completion of the questionnaire. Upon completion, the questionnaires were packaged, sealed, and kept in the respective homes of the delegated men. This researcher then arranged for the collection of the packaged items. This researcher delegated one of several people that make regular trips to Nigeria to make the collection. The data analysis was done in the United States.

It is important to state that sending and receiving items to and from Nigeria by unofficial carriers has proved more reliable over time. In Nigeria, losses of mailed materials are rampant, and excessive lateness in delivering mailed items is commonplace.

Analysis and Statistical Procedures

The mean and the standard deviation for each of the 48 indicators were computed using the equations below:

$$\text{The Mean, } M = \frac{Li}{N}$$

$$\text{The Standard Deviation, S.D.} = \left[\frac{(Li - M)^2}{N - 1}\right]^{\frac{1}{2}}$$

Where:

Li is the response on the agreement scale by a given respondent.

M is the arithmetic mean of the sample.

N is the total number of observations in the population.

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All usable responses to each of the 48 indicators were used to calculate the mean and standard deviations. These represented the quantified measures of effectiveness for each of those indicators.

These measures were linked to each of the five dependent variables—adaptability, productivity, job satisfaction, profitability, and resource acquisition—that formed the assessment criteria for this study. Appendix B shows the tabulation of the five facets of effectiveness with the independent variables and the questionnaire statement numbers. The statistical mean and standard deviation of effectiveness measures for adaptability, productivity, job satisfaction, profitability, and resource acquisition were obtained for the Ajaokuta Steel Company. To examine Hypothesis 1, which stated that the five dependent variables of the organizational effectiveness are distinct but related, the variable means were compared and the correlation matrix was obtained to determine the variables' intercorrelation.

In order to examine Hypothesis 2, which stated that Ajaokuta is ineffective in its organizational behavior and practices, the mean effective scale measures for all five facets were determined. Means and standard deviations were calculated for FMW&H and Negris, respectively, for the purpose of establishing discriminant validity. It was expected that Negris Limited would produce higher numbers, on the average, relative to the Ajaokuta Steel Company or the Federal Ministry of Works, Ilorin.

In order to examine Hypothesis 3, which stated that the lack of success at Ajaokuta has occurred basically because its organizational behavior and practices did not match the rational, natural, and open system model of organizational management, a

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conclusion was derived from the conclusion of hypothesis 2 and normative principles on organizational effectiveness.

Summary

Both qualitative and quantitative measures were used in this study. For the quantitative measures, the selected multivariate variables were adaptability/flexibility, productivity, profitability, job satisfaction, and resource acquisition. The independent variables comprised 48 indicators grouped under four broad headings: employee characteristics, organizational characteristics, environmental characteristics, and managerial policies and practices.

Evaluations were made based on interview responses from key officials of Ajaokuta and the responses to structured questionnaire statements that were administered to employees. A sample of 300 from the Ajaokuta population of 4600 men and women was selected. The same questionnaire was offered for completion to two other organizations: the Federal Ministry of Works, Ilorin, and Negris Limited, Lagos. The results from these two organizations served as a discriminant validity of this process. The methods of analyses and the statistical procedures were also presented.

Chapter 5 reports the results from the questionnaires, and the analyses of the data from ASCO. For the purpose of establishing validity of the questionnaire instrument, the mean results for FMW&H and Negris will be presented only in Chapter 6.

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CHAPTER 5: RESULTS

In this chapter, the results of the completed surveys from ASCO will be presented with their analyses. Mean effectiveness measures for the identified facets are presented in Chapter 6 for the Federal Ministry of Works and Housing, and Negris. These two organizations served to establish the discriminant validity of the questionnaire instrument.

Of the 300 questionnaires sent to Ajaokuta in April 2000, 194 responses were returned (65% response rate). The Federal Ministry of Works & Housing, Ilorin completed and returned 198 questionnaires (99% response rate). Of these, 62 were determined to be from other departments in the Federal Secretariat and were eliminated from analyses, leaving a final sample size of 136. Despite a series of efforts, Negris was able to complete and return only 29 responses (14.5% rate of return). This chapter will report the data and analyses of the focal organization, ASCO, only.

Table 1 shows that out of the 194 employees who completed the survey, 39 were nonprofessional or junior staff (employees on GL01-GL07, or SS1-SS6), 129 were senior, middle-level, and supervisory staff (employees on GL 8-GL13, or SS7-SS12), and 10 were senior management staff (GL14-GL17, or SS13-SS16). The participants are considered to be representative of the Ajaokuta Steel Company population. The absence of participants at the GL 01 and GL 02 category is understandable; no new hiring of employees has taken place in the organization for a number of years. There are probably, if any, an insignificant number of employees in the GL01 and GL02 categories at this time. Also it is common practice to report the actual salary grade level instead of the grade level of the acting position. For example, an identified participant who is deputy

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general manager reported a GL-15 instead of a GL-16 grade level. Table 1 shows that the sample was selected from across organizational hierarchies of the Ajaokuta Steel Company.

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Table 1
ASCO Participants: Grade Level or SS (Recoded)

The average respondent has been employed 15.4 years (SD = 5.6). Eighty-one percent of respondents are male.

Response	Frequency	Percent
GL 03	1	6
GL 04	4	22
GL 06	5	28
GL 07	7	39
GL 08	11	61
GL 09	11	61
GL 10	12	67
GL 11	2	11
GL 12	8	44
GL 13	6	33
GL 14	3	17
GL 15	2	11
SS 2	1	6
SS 4	2	11
SS 5	8	44
SS 6	12	67
SS 7	13	72
SS 8	29	161
SS 9	17	94
SS 10	13	72
SS 11	2	11
SS 12	6	33
SS 13	4	22
SS 14	1	6
Total	180	1000
Missing	14	
Total	194	

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Table 2 shows the recent Harmonized Public Service salary structure (HAPSS) for the Federal Public service of Nigeria. The questionnaires were completed shortly before the HAPSS was published. During that time different salary scales were in use by various divisions of the Nigerian Public Service. They included the grade level (GL) and the salary structure (SS). However, the present revision and harmonization represents an increase for all such divisions. The GL and the SS are merged as equivalents in the present dispensation. Grade levels are shown vertically while the steps are shown horizontally. The steps are designed for employees who may have to spend several years at the same grade level.

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Table 2

Harmonized Public Service Salary Structure (HAPSS) for the Federal Republic of Nigeria

Grade Level	1 N	2 N	3 N	4 N	5 N	6 N	7 N	8 N	9 N	10 N	11 N	12 N	13 N	14 N	15 N	INCR N
1	411084	49104	59208	51312	52416	53520	54624	55728	56832	57936	59040	60144	61248	62352	63456	1104
2	49932	51408	52884	54360	55836	57312	58788	68264	61740	63216	64692	66168	67644	69120	70596	1476
3	51588	53436	55284	57132	58984	60828	62676	64524	65372	68228	70868	71916	73764	75612	77460	18
4	54168	56388	58608	60828	63048	65268	67488	66708	71928	74148	76368	78588	80808	83078	85248	2220
5	61740	64320	66900	69480	72060	74640	77220	79800	82390	84960	87540	90120	92700	95230	97860	258
6	75876	79020	82164	85308	88452	91596	94740	97884	101028	104172	107316	110460	113604	116748	119892	3144
7	101760	105636	109512	113388	117264	121140	125016	128892	132768	136644	149520	144396	148272	152148	156024	3876
8	133632	138288	142944	147600	152256	156912	161568	166224	170880	175536	188192	184848	189504	194160	198816	4656
9	157512	163056	168604	174144	179668	185232	190776	196320	201864	207408	212952	218496	224040	229584	235128	554
10	185436	191532	197623	203724	209820	215916	222012	228108	234204	240300	246396	252492	258588	264684	270780	6096
12	218064	227640	237276	246912	265548	266184	275820	285456	292672	304728	314364	9636				
13	243732	253920	264108	274296	284484	294672	304860	315848	325236	335424	345612	1018				
14	269580	280548	291516	302484	313452	324420	335388	346356	357324	368292	379260	10968				
15	301452	316260	331068	345876	369684	375492	390300	405100	419916	14808						
16	333420	351216	369012	386808	404604	422800	468196	457992	475788	17796						
17	371718	391944	412140	432336	452532	472728	492924	513120	533316	20196						

Note: 1 U.S Dollar = 102 Naira

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Table 3 reports the participants' composition by departments. Eighty-five (47.2%) of the participants are in the Operations Department, and 75 (41.7%) are in Management Services. The Operations and Management Services Departments are, by far, the largest two departments at Ajaokuta. The Management Services Department include the various administrative staff. Four (2.2%) belong to the Finance Department, 5 (2.8%) belong to the Commerce Department, 9 (5%) are in the Engineering Department, and 2 (1.1%) of the 194 participants are from the office of the managing director. Fourteen participants did not state their department in the questionnaire survey.

Table 3
ASCO Participants by Departments

Response	Frequency	Percent
Operations	85	47.2
Management Services	75	41.7
Finance	4	2.2
Commerce	5	2.8
Engineering Services	9	5.0
Office of MD/CEO	2	1.1
Total	180	100.0
Missing	14	
Total	194	

Three hundred questionnaires were distributed to all departments, but no returns were received from the departments of power, real estate, and utilities. Repeat visits to those departments did not produce usable responses from those employees. According to the facilitator, employees in those departments constituted less than 5% of the total staff. It is doubtful that the unreturned questionnaires would have made any significant difference in the effectiveness means.

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Tables 1 and 3 show that the sample, to a great extent, comprised participants from across organizational hierarchies and across departments. An inclusive sample frame is desired for population representativeness and data reliability.

Table 4 displays the effectiveness scale reliabilities for the five facets that were measured for ASCO. The reliability of the sample result, measured in the interval 0 to 1, is a measure that compares the sample result to the true state of the universe. The table displays the reliabilities for adaptability and flexibility (n=186) = .48, productivity (n=146) = .81, job satisfaction (n=162) =.76, profitability (n=180) = .48, and resource acquisition (n=175) = .57, respectively. These values are considered high, especially for the cases of productivity and job satisfaction. High alpha values, as shown especially in the cases of the productivity and the job satisfaction scales, attest to the reliability of the questionnaire. High reliabilities imply that the instrument measures some traits in a dependable manner.

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Table 4
Scale Reliability for each Effectiveness Facet

Effectiveness facet	Alpha
Adaptability and Flexibility Scale (N=186) Comprising items: 4,6, 14, 17, 18, 35, 39 43, 44, 45, 46, 47	.48
Productivity Scale (N=146) Comprising items: 2-4, 6, 7, 9-48	.80
Job Satisfaction Scale (N=162) Comprising items: 1-5, 8-17, 19, 21-27, 34 34, 38, 48	.76
Profitability Scale (N=180) Comprising items: 15, 20, 29-33, 35, 36, 39 42-44, 47	.48
Resource Acquisition Scale (N=175) Comprising items: 11, 13, 15, 17, 18, 19, 31 31, 33, 34, 42, 45	.57

Table 5 represents the average scale intercorrelations of the measured variables. When two measures are related, the term "correlation" is usually used to describe the fact. The Pearson correlation, in general, measures the degree of relationship on a scale of -1 to 1 (the range representing perfect inverse relationship to a perfect direct relationship). Positive values, as obtained here, represent the degrees of direct relationship.

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Table 5
Scale Intercorrelations for the Five Effectiveness Facets

Company		Adaptability & Flexibility	Productivity	Job Satisfaction	Profitability	
ASCO						
Productivity						
	Pearson Correlation	.595				
	Sig. (2-tailed)	.000				
	N	194				
Job Satisfaction						
	Pearson Correlation	.417	.914			
	Sig. (2-tailed)	.000	.000			
	N	194	194			
Profitability						
	Pearson Correlation	.480	.595	.459		
	Sig. (2-tailed)	.000	.000	.000		
	N	194	194	194		
Resource Acquisition						
	Pearson Correlation	.602	.753	.649	.653	
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	194	194	194	194	

Intercorrelations among the five effectiveness scales were calculated from the responses obtained from ASCO. Details of the intercorrelations comprising 10 combinations (the combinations of any two from a set of five elements) are shown in Table 5. The Pearson correlation was highest for job satisfaction and productivity (0.914) and lowest for job satisfaction and adaptability/flexibility (0.417). Correlation measures for the other combinations fell in between these extremes. The Pearson correlation for productivity and adaptability/flexibility was 0.595, for profitability and adaptability/flexibility was 0.480, for profitability and productivity was 0.595, for profitability and job satisfaction was 0.459, for resource acquisition and adaptability/flexibility was 0.602, for resource acquisition and productivity was 0.753, for resource acquisition and job satisfaction was 0.649, and for resource acquisition and

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profitability was 0.653. All correlations were significant at $p<.001$ (2-tailed). The results show that the five effectiveness scales were highly correlated with one another. The results conform with the general organizational effectiveness notion; usually an organizational practice that promotes effectiveness in one goal area fosters effectiveness in other areas.

Table 6 represents the means and standard deviations for the five facets of organizational effectiveness that were measured for ASCO. The mean is the most frequently used measure of central tendency in descriptive statistics. The mean provides the best estimate available of an individual score, x, given only the information that x is one of the n scores in a known frequency distribution (Williamsen, 1974). The most commonly encountered measure of variation of scores is the variance (and its square root, the standard deviation). The standard deviation provides the advantage of a linear measure of variation.

Table 6
Means and Standard Deviations for the Five facets of Effectiveness for ASCO

Facet of Effectiveness	**N**	**M**	**SD**
Adaptability & Flexibility	194	2.8396	.3907
Productivity	194	3.1286	.3438
Job Satisfaction	194	3.0936	.4538
Profitability	194	3.3123	.3667
Resource Acquisition	194	3.0719	.3672

The Likert scale means (and standard deviations) for ASCO were as follows: adaptability and flexibility 2.84 (.39), productivity 3.13 (.34), job satisfaction 3.09 (.45), profitability 3.31 (.37), and resource acquisition 3.07 (.37) (Table 6). These results suggest that, overall, Ajaokuta is not effective, as measured by the described instrument.

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The lowest measure was adaptability/flexibility with a mean of 2.84 (.39), which implies that Ajaokuta is rigid in carrying out its work processes and that its work processes do not encourage innovation. Next was resource acquisition with a mean of 3.07 (.37). This low measure suggests that Ajaokuta's effectiveness in tapping available and useful resources from its environment is low. Next on the scale was employee job satisfaction, with a mean of 3.09 (.45). This result does not suggest general employee satisfaction. Low measures of job satisfaction were also depicted in items 1-5, 8-13, 16, 17, 19, 21, 22-27, 34, 38, and 48 (Table 7).

A mean effectiveness measure of 3.13 (.34) on the productivity scale suggests low productivity at Ajaokuta. This conclusion is supported by the outcomes assessment, which revealed an average of 10% design capacity productivity levels during the past 17 years, as discussed in Chapter 1. Low measures of productivity indicators included items 2-7, 9-25, and 27-48 (Table 7). A mean profitability measure of 3.31 (.37) confirms that Ajaokuta has not shown itself as a profitable organization, as defined in Chapter 4, for the case of a state enterprise. The low indicator variables for profitability comprised items 15, 20, 29-33, 35, 36, 39, 42, 43, 44, and 47 (Table 7).

Figure 2 represents the mean measure of each dependent variable. The figure depicts the measured mean value of each effectiveness facet on the Likert scale. On the vertical axis is the Likert scale sample mean representation from 1.0 (strongly disagree) up to 5.0 (strongly agree). The five measured facets—adaptability and flexibility, productivity, job satisfaction, profitability, and resource acquisition—are represented on the horizontal axis. The mean responses are different, but are all closest to the 3.0 scale. It

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is not evident from this graph that ASCO has been effective in any of the five measured variables.

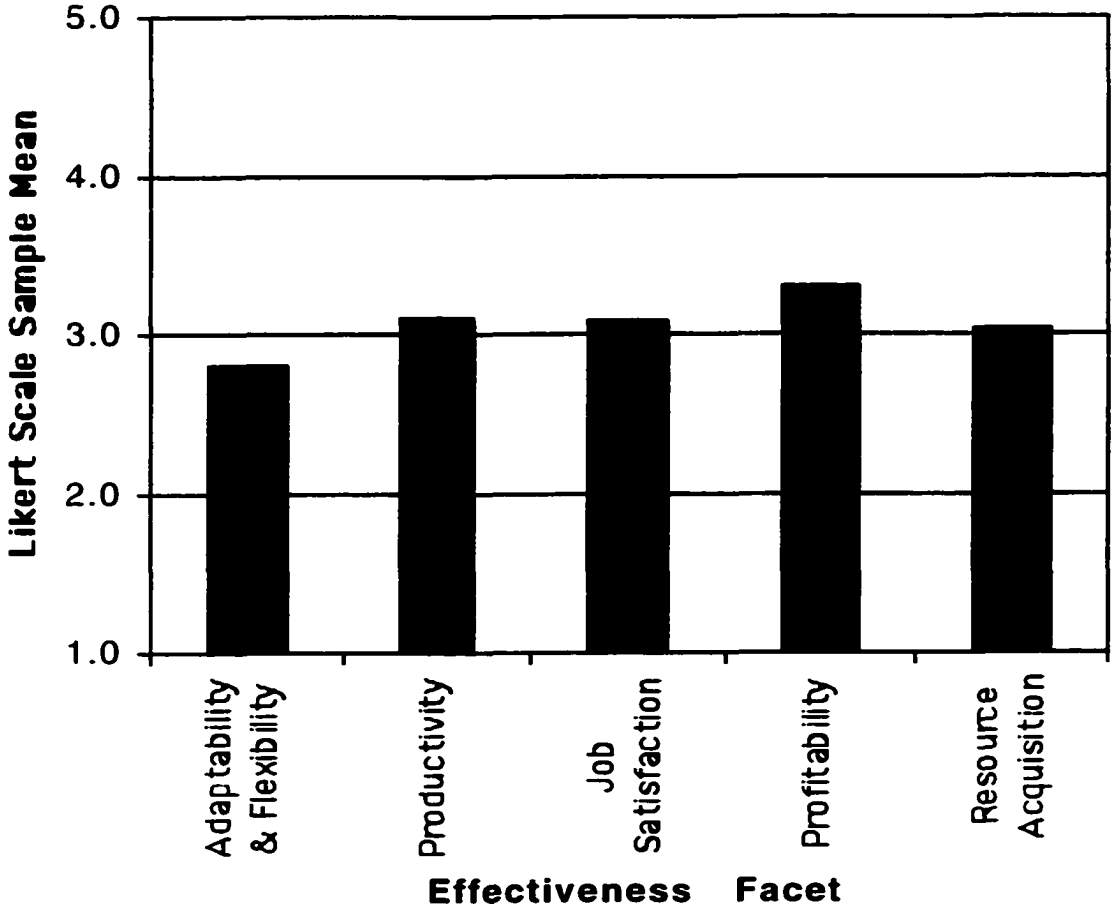

Figure 2. Bar graph representation of the mean measure of each facet of effectiveness.

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Table 7 presents the means (and standard deviations) for each of the 48 items from the ASCO participants. Item 1, Ajaokuta's employees think highly about the company, was 4.20 (1.12). The high mean shows that employees are aware that ASCO is an establishment from which much is expected.

Item 2, demonstration of trust by management, was 2.58 (1.08). This low mean value suggests that proper management-employee relationships were not developed within the company. Human relations experts (Ouchi, 1981; Peters & Waterman, 1982) emphasized the importance of relations building as a precondition for organizational effectiveness.

Item 3, employees and managers express their feelings and ideas freely, received 2.80 (1.30). This result suggests that Ajaokuta has not been tolerant, has not encouraged innovation, and has not operated as an open system. In an open system, initiative, innovation, individuality, tolerance, and learning are emphasized (Gerbert & Boerner, 1999).

Item 4, management obtains employees' input before setting goals for them to achieve, was 3.20 (1.31). This result suggests that ASCO occasionally obtains its employees' input before setting certain goals. Employees' participation in decision making has been found to promote cooperativeness and enhance organizational effectiveness (Herrenkohl, Judson, & Heffner, 1999).

Item 5, management always seeks the opinions of the employees before making decisions on matters that affect them, was 2.03 (1.27). A relatively low mean for this item suggests that ASCO employees would like to have more say in matters that affect them.

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Item 6, management is not rigid when trying to respond to a change, was 2.78 (1.16). This result suggests a low level of flexibility. In order to be a flexible organization, Ajaokuta must respond to changes in routinized organizational processes by giving consideration to all available options.

Item 7, ASCO believes in organizing teams comprising members from various departments in order to carry out certain tasks, was 3.56 (1.03). This result suggests that the practice is used to some extent. The Total Quality Management proponents (Deming 1986; Ishikawa, 1985; Juran, 1974) emphasize the use of teamwork as a breaker of barriers that has been erected in traditional organizations.

Item 8, the company believes in developing its employees by giving them regular training, was 2.68 (1.38). This low mean suggests that regular training for employees is not the norm at ASCO. To be competitive in the global world, Ajaokuta must expose employees at all levels to various periodic workshops and training.

Item 9, members of ASCO are very friendly with one another, was 3.67 (1.15), which suggests that employees maintain some level of connection with one another. While this partly arises from the cultural conditions, it may be remarked that the employees' cultural tendency to operate as a group rather than as individuals provides an opportunity for organizational cooperativeness and the achievement of goals.

Item 10, the management is very friendly to the employees, was 3.25 (1.14). This mean value suggests that employees are, to some extent, satisfied with the friendly relationship extended to them by management. In high-power distance cultures, subordinates expect and are satisfied with limited cordiality and friendship accorded them by the high status group (Earley, 1999).

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Item 11, ASCO employees are able to make decisions in the way they carry out their job, was 3.68 (1.17). This shows relatively high, but not sufficient, satisfaction.

Item 12, employees have necessary tools and materials to properly carry out their tasks, was 2.12 (1.16). This mean effectiveness measure was low, which suggests that the employees are generally not well equipped to do their jobs. Prominent among the materials needs is the ready availability of raw materials for steel production (Appendix D). Other needs within and outside of the production unit might include other material needs and employees training for various tasks. A manufacturing plant should be designed to effectively respond to customer concerns. To be effective, an organization must believe that its employees are the real investment; regular training must be the practice (Nogler, 1998).

Item 13, ASCO employees participate in the decision making of their bosses, was 2.95 (1.23). This mean measure suggests that the managers need to consult their subordinates more on organizational matters. There is compelling evidence that communication prior to decision making increases cooperation in organizations (Argyris, 1993; Bennis, 1999; Coyle-Shapiro, 1999).

Item 14, ASCO employees do not have to pass all suggestions in writing through their immediate bosses, was 2.17 (1.12). This suggests a practice of strict formality in the organization. The disadvantage in this strict arrangement is that useful suggestions are sometimes excessively delayed before getting to destination or they do not make it past the immediate boss, thereby stifling organizational effectiveness.

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Item 15, whenever bosses give tasks, they expect results, was 4.50 (.73). This is a high mean measure. In a high-power distance culture as in Nigeria, subordinates readily carry out their bosses' instruction.

Item 16, ASCO encourages good performance by giving rewards and recognition to those who do well, was 2.24 (1.23). Organizations in search of excellence, regardless of environment, often incorporate the practice of reward and recognition into their culture (Peters & Waterman, 1982; Roach, 1998).

Item 17, ASCO employees always know the difficulty that the company is facing because the management keeps employees informed, was 2.31 (1.21). This mean measure is low and suggests that management generally withholds pertinent information from subordinates. Getting workers' input early and often cannot be realized unless those workers have necessary information.

Item 18, employees are afraid to try a new approaches because failing could get them into trouble with the boss, was 3.11 (1.12). This result suggests that, to some extent. employees do not feel comfortable experimenting with new methods. In order to be flexible and innovative, an organization must drive fear from the minds of its workers (Deming, 1986).

Item 19, other than the annual evaluation the boss never gives feedback on the day-to-day performance of employees, was 2.73 (1.33). This low mean measure suggests that ASCO management must improve its practices to make employees become better by communicating to them on their daily performance. Emphasis should be placed on growth rather than on assessment.

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Item 20, employees know those things that are most important to accomplish and they work towards them, was 3.87 (.93). This relatively high mean value suggests that ASCO employees are probably cooperative employees.

Item 21, ASCO employees are satisfied with the salary paid to them, was 2.04 (1.19). This very low measure suggests a low level of job satisfaction. Inadequate employee wages reduces the level of worker satisfaction and morale (Deming, 1993).

Item 22, ASCO workers' salaries are always paid on time and regularly, was 2.00 (1.12). This result conforms with the general situation in Nigeria governmental and parastatal institutions during the past few years. During the time when employees responded to the questionnaire, employees often had their salaries delayed for many months.

Item 23, employees are excited to go to work everyday because they enjoy doing their work, was 3.77 (1.27). This relatively high value is in conflict with the mean value of item 21 but suggests that employees still believe they have good jobs.

Item 24, the bosses want the employees to come to work everyday, was 4.30 (1.10). This high mean value suggests a great sense of need in the minds of the employees.

Item 25, the company goals are employee goals, was 4.29 (.94). This suggests a general spirit of cooperativeness on the part of the employees.

Item 26, employees believe that there are attractive benefits to remaining a member of this company, was 3.72 (1.09). This level of response also suggests that ASCO employees believe, to a certain extent, that they are in a good company.

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Item 27, employees believe in the achievement of company goals, was 4.41 (.79). This high mean value suggests that ASCO employees are willing to cooperate with management to achieve common goals.

Item 28, the conditions of service of all employees are considered good, was 2.52 (1.20). The low mean value is indicative that employees do not have sufficient job satisfaction in terms of benefits and other extrinsic rewards.

Item 29, employees will not do anything to damage the good name of ASCO since the company's success is the employees' success, was 4.27 (1.00). This high mean value suggests that employees are loyal to the company. Chapter 2 of this study revealed that equipment is frequently vandalized by employees, which is contradicted by this response. One possible explanation is that employees sometimes steal in order to survive as a result of not being paid their salary for several months.

Item 30, to get employed by this company one has to be competent, was 3.53 (1.25). This outcome suggests that merit is considered in employment decisions at ASCO.

Item 31, the contractors supplying to ASCO are selected based on merit, was 2.49 (1.18). This is a low mean value and suggests that contractors are selected by virtue of their connection to the management and not by merit. Supplier performance and ability to deliver regularly, even when payments are occasionally delayed, is key to continuous firm productivity (Gowen & Tallon, 1999).

Item 32, ASCO does not use the quota system in filling up the management vacancies, was 3.08 (1.20). This result suggests that the company probably allocates

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certain management positions by quota and may need to recognize the importance of filling certain positions solely by merit.

Item 33, it is important to the managers and the chief executive of ASCO to meet all its production and service goals, was 3.71 (1.08). This response by ASCO employees suggests that they perceive management as committed individuals. It may be linked with employees' limited societal expectations from committed leaders, who are required to be driven by some inner force to produce results and to continuously achieve growth for the organization they serve.

Item 34, the goals of this company are always clearly stated and understood by all workers, was 2.86 (1.20). The low mean value indicates that the goals and agenda of ASCO are usually not clearly communicated to the employees by management. Dixon (1997) identified four critical data elements that relate to goal setting. Three of them are (a) the availability of organizational data, (b) publishing the data, and (c) the discussion that constructs meaning from data.

Item 35, the management of ASCO is committed to achieving results on their well-formulated goals, was 2.83 (1.13). The mean value indicates that ASCO management staff require better commitment in order to achieve results on company goals.

Item 36, the management of ASCO is able to regularly secure the required raw materials and other resources because of its commitment to the company's success, was 2.30 (1.10). This low mean value confirms the response from ASCO officials regarding ASCO's need for regular supply of raw materials (Appendix D).

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Item 37, when working on a task and seeing the boss coming an employee gets afraid, was 4.4 (1.09). This relatively high mean value suggests a poor working climate. Deming (1986) noted that driving fear from the minds of the workers will enhance organizational effectiveness.

Item 38, the managerial policies and practices of this company encourage the practice of honesty, was 2.64 (1.20). The low mean value suggests that the employees do not perceive the managerial policies and practices as encouraging honesty. Workers probably do not see their leaders as honest. The establishment of trust and honesty by leaders is a precondition to a good working climate (Scott, 1998).

Item 39, the position of the managing director/CEO is based on merit and the government adheres to this in making the selection, was 3.52 (1.32). A response leaning towards agreement on this item suggests that ASCO employees believe that the CEOs selected for ASCO were somewhat qualified for the job. Among many attributes of good leadership are the skills for facilitating communication, maintaining cohesiveness, and forming a collective purpose that becomes morally binding on participants. In order to meet rational goals in an open system, visionary leaders have the responsibility to form critical alliances and connections, information systems, and institutional supports.

Item 40, the suppliers to this company are committed to delivering their items in good time, was 2.62 (1.02). This low mean response suggests that ASCO suppliers do not feel committed to supply items at specific times. The result suggests that ASCO management and its suppliers do not have a binding relationship based on a results-oriented agreement. A precondition for such a relationship is based on the organizational practice of selecting competent suppliers.

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Item 41, the government is doing well by providing this company with needed funds, was 2.69 (1.40). On this item, participants probably believe that the Nigerian government needs to spend more money on the company.

Item 42, the ASCO geographical location is quite suitable for the company, was 4.26 (1.08). This result shows that participants believe the industry location is suitable, probably because of the availability of iron ore, water access for transportation, and unrestricted land space.

Item 43, the government provides autonomy to ASCO and does not directly influence ASCO management decisions, was 2.31 (1.07). This low mean measure suggests that ASCO's managerial policies and practices are, to a large extent, influenced by government. To the extent that ASCO is able to exhibit high performance in all necessary facets, attaining autonomy moves closer to reality. ASCO as a subsystem has the capability to influence the Nigerian government as well.

Item 44, major decisions concerning ASCO are made by ASCO management and not directed by government or any other institution outside of ASCO, was 2.42 (1.14). The low mean measure suggests a lack of sufficient empowerment. Empowerment of ASCO as an organization would produce greater proactivity and organizational commitment, but this empowerment must be earned.

Item 45, ASCO exchanges ideas with other companies that do this same kind of production, was 3.20 (1.05). This mean measure tilts slightly to the agreement side. It suggests that, to some extent, ASCO cooperates with other institutions in order to accomplish mutual goals. Effective organizations require institutional supports and the formation of alliances (DiMaggio, 1988).

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Item 46, my company and the community in which it is situated benefit from each other in the way of mutual assistance in social activities and community services, was 2.92 (1.31). This mean measure tilting slightly towards disagreement suggests that ASCO maintains a low interaction with the community in which it is situated. In order for ASCO to operate as an open system, it will be required not only to maintain exchanges with its larger environment but to nourish, and be nourished by, its immediate environment and eventually transform it.

Item 47, the power failures and the unreliability of the communication systems (phone, mail, fax, and others) do not contribute to the low performance of my company, was 3.31 (1.29). The mean measure suggests that the unreliability of the communication systems is not a major cause of low performance at ASCO.

Item 48, ASCO employees enjoy doing their jobs because they care for one another, was 3.75 (1.18). This measure suggests that ASCO employees maintain good relationships with one another. The socialization of employees and their internalization of company norms and values, termed the "clan system" (Ouchi, 1981), has been found to enhance Japanese organizations.

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Table 7
ASCO Means and Standard Deviations of Each Item

. Item	N	M	SD
1. We employees think highly about our company.	192	4.20	1.12
2. There is a demonstration of trust by the management of this company.	190	2.58	1.08
3. The employees and managers express their feelings and ideas freely.	192	2.80	1.30
4. The management sets goals for all the employees to achieve, without asking for employees' opinions. (r)	193	3.20	1.31
5. The management always seeks the opinions of the employees before making decisions on matters that affect them.	193	2.03	1.27
6. When this company wants to respond to a change the management is usually not rigid about a particular method.	189	2.78	1.16
7. Our company believes in organizing teams comprising members from various departments, in order to carry out certain tasks.	193	3.56	1.03
8. This company believes in developing its employees by giving them regular training related to the job.	192	2.68	1.38
9. Members of this company are very friendly to one another.	193	3.67	1.15
10. The managers are very friendly to the employees in this organization.	193	3.25	1.14
11. Looking at my job as a whole I am able to make many decision in the way I carry it out.	191	3.68	1.17
12. In this company, employees have the necessary tools and materials to properly carry out their tasks.	193	2.12	1.16
13. We employees participate in the decisions of our bosses (e.g. the supervisor asks for employees' opinions and suggestions).	193	2.95	1.23
14. When employees want to make a suggestion or a report it is not accepted unless it is made in writing and passed through the immediate boss. (r)	193	2.17	1.12
15. Whenever my boss gives me a task, he expects results.	188	4.50	.73
16. Our company encourages good performance by giving rewards and recognition to those who do well.	191	2.24	1.23
17. We employees always know the difficulty that our company is facing because the management keeps us informed.	194	2.31	1.21
18. Employees in our company are afraid to try any new approach. That is because if we fail, we will get in trouble with the boss. (r)	193	3.11	1.12
19. Other than the annual evaluation, my boss never gives me any feedback about my day to day performance. (r)	189	2.73	1.33
20. We employees know those things that are most important to accomplish and we work towards them.	194	3.87	.93
21. We employees of this company are satisfied with the salary paid to us.	192	2.04	1.19
22. Our salary is always paid on time and regularly.	193	2.00	1.12
23. I am always excited to go to work everyday because I enjoy doing my work.	190	3.77	1.27

(table continues)

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Item	N	M	SD
24. My boss does not care if I come to work everyday. (r)	192	4.30	1.10
25. The company's goals are my goals.	193	4.29	.94
26. We employees believe that there are attractive benefits to			
27. We employees believe in the achievement of company goals.	194	4.41	.79
28. The conditions of service, of all workers in this company are considered good.	191	2.52	1.20
29. Employees of this company will not do anything to damage the good name of the company since the company's success is the employees' success.	192	4.27	1.00
30. To get employed by this company, one has to be competent.	193	3.53	1.25
31. The contractors supplying to this company are selected based on connection, and not by merit. (r)	194	2.49	1.18
32. My company uses the quota system in filling up the management vacancies. (r)	193	3.08	1.20
33. It is important to the managers and the chief executive of this company to meet all its productions or service goals.	192	3.71	1.08
34. The goals of this company are always clearly stated and understood by all workers.	192	2.86	1.20
35. The management of this company is committed to achieving results on their well formulated goals.	192	2.83	1.13
36. The management of this company is able to regularly secure the needed raw materials and other resources because of its commitment to the company's success.	193	2.30	1.10
37. When I am working on a task and I see my boss coming in my direction, I get afraid. (r)	191	4.14	1.09
38. The managerial policies and practices of this company encourages the practice of honesty.	191	2.64	1.20
39. The position of the managing director/CEO is based on merit despite the fact that the government decides on its own on this matter. (r)	190	3.52	1.32
40. The suppliers to the company are committed to delivering their items in good time.	193	2.62	1.02
41. The government is doing well by providing this company with needed funds.	193	2.69	1.40
42. This environment is quite suitable for this company.	194	4.26	1.08
43. The influence of the government on this company is so much that they direct the company on what the company must do. (r)	191	2.31	1.07
44. Major decisions concerning my company are directed by the government and/or institution outside of my company. (r)	191	2.42	1.14
45. My company exchanges ideas with other companies that do this same kind of production (business).	193	3.20	1.05
46. My company and the community in which it is situated benefit from each other in the way of mutual assistance in social activities and community services.	193	2.92	1.31
47. The power failures, and the unreliability of the communications systems (phone, mail, fax, and others) contribute highly to the low performance of my company. (r)	192	3.31	1.29
48. We employees enjoy doing our jobs because we care for one another.	194	3.75	1.18

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The Qualitative Determinants of ASCO's Effectiveness

From the interview responses of 13 August 1999 (Appendix D), several themes emerged:

1. A lack of consistent production.

2. Unnecessary interference on Ajaokuta by the government.

3. Cash flow problems.

4. Difficulty in transporting raw materials by Ajaokuta.

5. Completing all phases of the Ajaokuta project.

6. A conflict of interest between Ajaokuta and the World Bank (the financing multilateral organization).

7. Too frequent replacement of Ajaokuta's chief executive. As of 13 August 1999, the ninth chief executive was serving at Ajaokuta in only 20 years of its existence. This situation has been attributed to the political control exercised by the Nigerian government.

8. Top-level officials and mid-level managers rarely attend any workshops or conferences.

9. The organizational working structure conforms with a one-line command. An integrative working structure is not the norm at Ajaokuta.

Summary

This chapter summarized the data and analysis based on completed questionnaires from Ajaokuta. The mean (and standard deviation) effectiveness measures on 5-point Likert scale were as follows: adaptability and flexibility was 2.84 (.34), productivity was 3.13 (.34), job satisfaction was 3.09 (.45), profitability was 3.31 (.37), and resource

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acquisition was 3.07 (.37). The effectiveness measures, by quantitative analysis, were low for all five effectiveness measures. The qualitative valuation also presented several obstacles to attaining effectiveness.

In the concluding chapter, a summary of findings, both qualitative and quantitative, will be presented. Also, the limitations of this study, suggestions for future research, recommendations, and conclusions will be presented.

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CHAPTER 6: SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary of Findings

Major findings from this study include the following:

• The five measured variables have different low values, but those measures are correlated.

• Ajaokuta is ineffective in its organizational practices and behavior.

• The lack of success at Ajaokuta has occurred because its organizational behavior and practices did not match the rational, natural, and open system model of organizational management.

The rational, natural, and open system model of organizational management, as it relates to Ajaokuta organizational effectiveness, requires further clarification. Normative principles predict that a rational, natural, and open system model of organizational management will produce organizational effectiveness. From this study's outcomes, it has been shown that Ajaokuta has not been effective. The two premises just stated jointly imply that Ajaokuta's organizational behavior and practices did not match the rational, natural, and open system model of organizational management.

In order to convey this conclusion more clearly, the above statements may be represented in symbolic forms. If M stands for Ajaokuta's organizational practices match with the rational, natural, and open system model, and E stands for Ajaokuta's effectiveness, then the normative and results statements above may be represented in symbolic forms as follows:

$$M \rightarrow E,$$

and $\underline{\sim E}$

The conclusion is $\sim M$

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This results from the inference law of Modus Tollens (Moore, McCann, & McCann, 1985, p. 39). The conclusion is that Ajaokuta's behavior and management practices did not match the rational, natural, and open system model of organizational management.

This research attempted to identify the causes of perceived organizational ineffectiveness of Nigeria' s Ajaokuta Steel Company. Since organizational effectiveness is a multivariate construct, obtaining measures of effectiveness based on Ajaokuta's adaptability to its environment, its productivity, the job satisfaction of its employees, its profitability, and its level of resource acquisition were primary goals in the quantitative analysis

This study set out to relate its findings to the rational, natural, and open system model. Results were obtained by a statistical analysis of the questionnaire data and interview responses of Ajaokuta's key officials. Both qualitatively and quantitatively, the effectiveness measures were found to be low. When conceptualized as a rational, natural, and open system, Ajaokuta's management practices fall short of the attributes of this model.

All three components of the desired model, to varying degrees, influence both productivity and profitability. Productivity, which is a purposive rational organizational goal, was found to be low according to outcomes and process measures. Low profitability measures are influenced by the low degree of adaptation to both the rational and the open system model. Low effectiveness measures, as indicated by the employee job satisfaction variable, suggest that Ajaokuta does not maintain itself as a social unit. The interpersonal skills of managers do not conform to the natural system model. Low effectiveness

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measures of adaptability/flexibility and resource acquisition suggest a lack of conformance to the open system model.

Addressing the Research Question

The research question asked, "Has the lack of success at Ajaokuta occurred because its organizational behavior and practices did not match the rational, natural, and open system model of organizational effectiveness?"

Ajaokuta will be effective in its adaptability/flexibility and resource acquisition to the extent that its system model conforms with the open system model. It will be effective in its job satisfaction to the extent that it conforms with the natural system model . It will be effective in its productivity and its profitability to the extent that it conforms to the rational, natural, and open system model.

Generally low mean measures of the 48 indicators obtained in this study imply that, to a large extent, Ajaokuta's organizational behavior and practices do not conform with the rational, natural, and open system model of organizational management. The indicators of these practices have been largely developed from employee and organizational characteristics, and managerial policies and practices. It can be concluded that Ajaokuta has not attained high effectiveness in the measured facets because this organization's behavior and practices did not match the natural, rational, and open system model of organizational management.

Establishing Validity of the Instrument

Table 8 shows the means and standard deviations for the five effectiveness facets measured for FMW&H and Negris. The mean (SD) was 2.85 (.42) for adaptability and

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flexibility. For productivity, the mean (SD) was 3.2 (.44), for job satisfaction the mean (SD) was 3.27 (.55), for profitability the mean (SD) was 3.22 (.41), and for resource acquisition the measure was 2.99 (.42). All values in the case of Negris were higher than they were for FMW&H. For adaptability and flexibility, Negris had a mean (SD) of 3.32 (.39). For productivity, the mean (SD) was 3.52 (.39). For job satisfaction, the mean (SD) was 3.38 (.56). The mean (SD) was 3.88 (.37) for profitability, and 3.32 (.46) for resource acquisition.

Table 8
Means and Standard Deviations for the Five Effectiveness Facets for FMW&H and Negris

Facets of Effectiveness	**N**	**M**	**SD**
FMW&H			
Adaptability & Flexibility	136	2.8528	.4134
Productivity	136	3.2245	.4403
Job Satisfaction	136	3.2732	.5502
Profitability	136	3.2229	.4178
Resource Acquisition	136	2.9884	.4163
Negris			
Adaptability & Flexibility	29	3.3166	.3895
Productivity	29	3.5168	.3918
Job Satisfaction	29	3.3724	.5578
Profitability	29	3.8788	.3710
Resource Acquisition	29	3.3239	.4588

Figure 3 depicts the graph representation of the effectiveness measures for both FMW&H and Negris. The figure clearly shows Negris as exhibiting higher effectiveness mean values than FMW&H for all the five measured facets, thereby establishing discriminant validity of the questionnaire.

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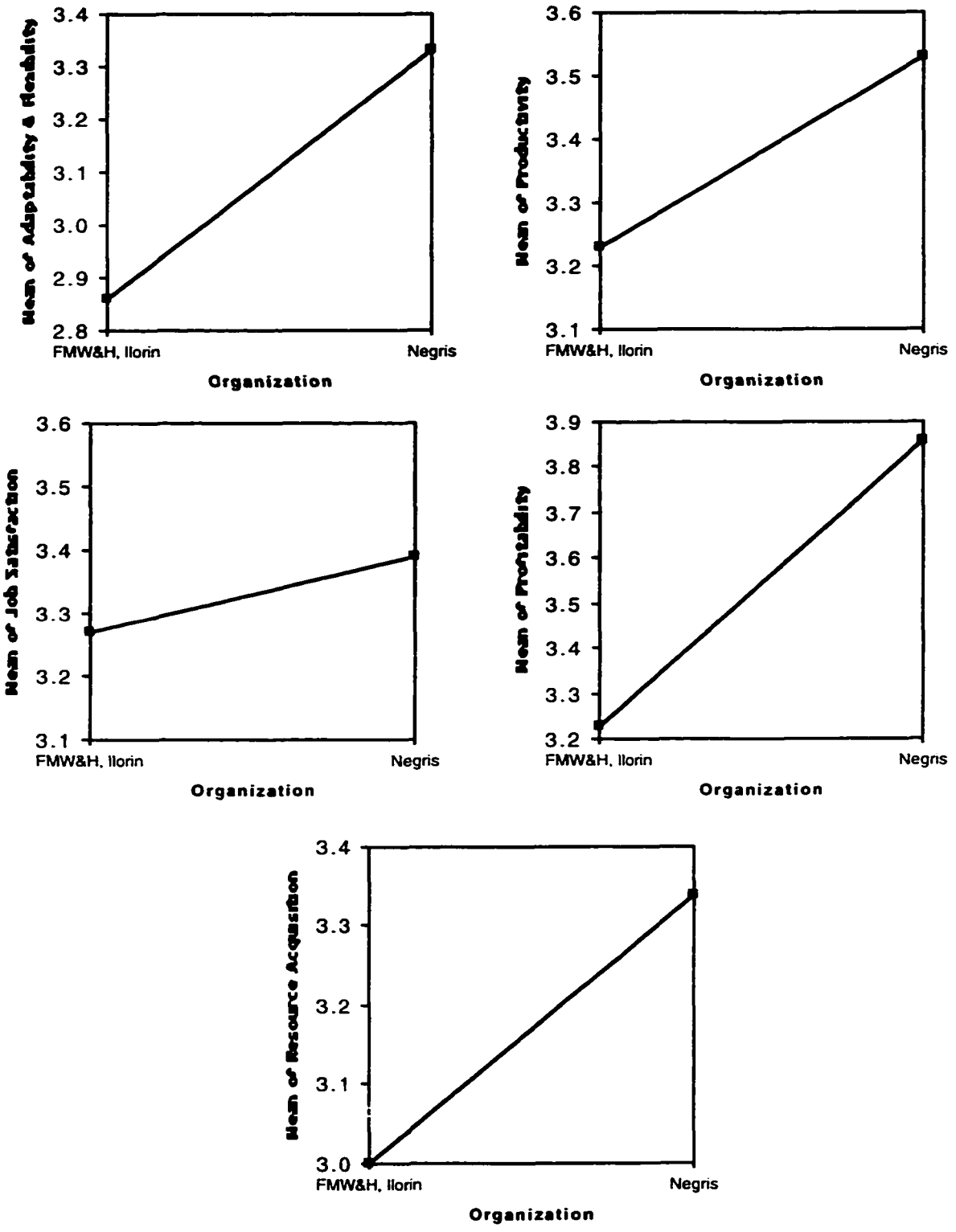

Figure 3. Comparison of Means of Five Measured Facets for FMW&H and Negris.

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Effectiveness Boosters for ASCO

Various techniques have been suggested by management experts for making organizations effective. Three commonly used methods in organizations are Total Quality Management (TQM), downsizing, and reengineering (Druckman, Singer, & Van Scott, 1997; Kanter, 1995).

The dimensions that TQM identify include innovation; customer satisfaction; efficient deployment of resources; exemplary and visionary leadership; full participation of employees, suppliers, and customers; and quantitative measurement and management by fact (Deming, 1986; Juran, 1992). The U.S. Department of Commerce developed a framework for quality when it established the Malcolm Beldrige National Quality Award in 1988. The leadership dimension is classified as a driver of quality. Four dimensions—information gathering and analysis, quality planning, quality assurance, and human resource management—are all classified as process dimensions. Customer satisfaction and quality results are two dimensions that are assumed to be desirable outcomes (Druckman, Singer, & Van Cott, 1997, p. 43).

A second approach for achieving improvement in organizational effectiveness is downsizing. Diverse definitions have been offered in the literature. Organizational downsizing can be thought of as a set of activities undertaken by management to improve at least one of the following measures: organizational efficiency, productivity, and competitiveness. Laying off employees constitutes only one aspect of the downsizing operation. Accompanying efforts may include division mergers and eliminating certain units within the organization. Research suggests that downsizing is often ineffective. It negatively affects morale, trust, culture, and productivity of surviving employees (Scott,

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1998). After Ajaokuta laid off about 20% of its staff in 1990, these downsizing effects were likely to follow.

Reengineering as a strategy for change involves "the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance such as cost, quality, service, and speed" (Hammer & Champy, 1993, p. 32). Reengineering is an activity that involves reinventing, or radically changing, those organizational process directly connected to production. Reengineering attempts to help organizations become better and more effective. The approach to effecting changes in an organization depends on the organization's internal and external circumstances.

One organizational behavior that influences cultural changes is the practice of work teams. Many organizations attempting to boost their effectiveness use a combination of work teams, integrating teams, and improvement teams. Work teams are established to perform the work that accomplishes an organization's core transformational processes. Integrating teams are established to make sure that efforts across various parts of the organization fit together. Improvement teams are established not to perform the core transformational processes of an organization but to improve in its capability in delivering its products and services effectively. The shared goal of the three teams is improvements in how the organization does its core work (Ledford, Lawler, & Mohrman, 1998).

All teams must be empowered. Empowering teams increases employees' morale, job satisfaction, and productivity. (Fitz-enz, 1997; Kanter, 1995). Teams must have all necessary resources to make them function effectively; those resources include clear

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direction and the knowledge, skills, information, and material resources to do their job. A team will be more effective if the conditions for high involvement are created and the team is empowered.

Empowering an appropriate chief executive of the Ajaokuta Steel Company is a precondition for the company's achieving greater effectiveness. To the extent that such a leader creates management practices that attribute high value to goal achievement and promotes practices that emphasize collaboration, innovation, communication, commitment, and partnering, the achievement of transformational success moves closer to reality.

Effectiveness Barriers at ASCO

Practices that constitute barriers to manufacturing industry effectiveness and that are common in developing nations have been noted by Berg and Whitaker (1986). In enumerating behavioral hindrances to effectiveness in organizations, Kanter (1983) included the following:

1. Insist that people who need your approval first go through several other management levels.
2. Treat identification of problems as signs of failure.
3. Control everything carefully.
4. Make decisions to reorganize or change policies in secret, and spring them on people unexpectedly.
5. Make sure the requests for information are fully justified. (p. 101)

Among other practices, Kanter (1983) identified three road blocks to managerial effectiveness: (a) dominance of restrictive vertical relationships, (b) poor lateral communication, and (c) availability of limited tools to do the job (pp. 69-100). Deming

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(1986) enumerated the diseases that create ineffectiveness in organizations. The author included the mobility of management and the existence of the "unmanned machine." Currently, the ninth chief executive is leading the Ajaokuta Steel Company in only 20 years. An average tenure of less than 3 years is too short to foster management continuity and effectiveness.

In the developing nations of Africa, effective management has been hindered by the scarcity and poor quality of data required for planning and policy formulation (Berg & Whitaker, 1986). Other hindrances to organizational effectiveness in the developing world include a lack of delegation of authority, corruption, and a focus on self-enrichment rather than organizational success (Kennedy, 1988; Thomas, 1976). In Nigerian institutions, in general, the lack of relevant data, a reluctance to delegate authority for fear of a failure in achieving some hidden and selfish goal, the widespread practice of corruption and fraud, and a focus on self-enrichment rather than on organizational success constitute barriers to organizational effectiveness and are inconsistent with the rational, natural, and open system model of organizational management.

As long as employees lack knowledge and awareness, the above practices, emanating from greed and distrust, will continue to flourish. A competent chief executive with a sense of calling may be able to help employees gain knowledge and awareness that will help create a new organizational culture. An organizational culture that disapproves of corruption in all its facets will significantly raise the level of effectiveness of any organization.

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Recommendations

In order to effect changes and boost organizational effectiveness, it is recommended that the following ideas be closely examined by the Ajaokuta Steel Company as well as the federal government of Nigeria:

1. The goals set for Ajaokuta in 1979 should be reviewed immediately in light of present circumstances. Plans for the designed but unbuilt plants should also be revisited. Changes in technology over the last 20 years have been unprecedented when compared with any 20-year period in human history. Obsolete ideas and equipment should be replaced by current ones. In a learning organization, when the reality changes, the vision must change with it. Thereafter efforts must continually be made to innovate work processes and improve product quality. Technology is dynamic, not static.

2. Efforts should be made to stop the frequent changes of the general manager/chief executive. This trend of high turnover of senior management staff was noted during the interview sessions (Appendix D). Competent chief executives must be selected based on exemplary qualities that include a shared vision with the federal government, patriotism, technological and administrative competence, and a passion for achievement. The chief executive is to be empowered, and he must be willing to create strategic relationships and to collaborate with the various constituencies involved in production: suppliers, customers, employees, manufacturers of similar products, the public, and the Nigerian government itself.

3. The railway line to Warri should be completed as soon as possible; billets produced at the Warri Rolling Mill will thereby be more easily transportable to Ajaokuta.

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Likewise, the transportation of coking coal and iron concentrates, from Lafia/Obi reserves and Itakpe respectively, must be efficiently provided for.

4. Long- and short-term goals of the organization should be clearly stated and published in the organization's periodic newsletters. There was no indication of any regular ASCO publications during the interview sessions, but they should be commenced to represent a major channel in the information network. Constraints, problems, and how the top management is handling them should also be made public.

5. Innovation in work processes and in product quality should become the norm. A cross-flow of ideas tends to raise standards. Experiences from various workshops and conferences attended by midlevel and high-level managers should serve to import ideas from the larger world. Management must understand the nonviability of being part of a technological advancement when a planned connectivity is not made. The midlevel and senior management level employees must participate in local and international conferences and workshops in order to survive in a globally connected world. A deliberate effort to import new ideas, on a continuing basis, must be made.

6. Collaborative project tasks should be introduced. The team should include engineers and designers, line staff, people in supplies, people in marketing and sales, and the general staff. While teams, single-leader working groups, and energized individuals are all useful for different task definitions, the collaborative project tasks are most effective when the potential for collective performance is high, the solutions and approaches are unclear, and management is skilled to build a real team. Apart from influencing effectiveness directly, collaborative tasks are especially useful in promoting broad-based behavioral change.

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7. The procedure for selecting suppliers of raw materials needs to be made public. Reliability in supply and willingness to accept delayed payments should be part of the criteria for selection. Ajaokuta must collaborate to achieve speed and quality through closer integration with suppliers and customers.

8. Most importantly, the Nigerian government, the Ajaokuta Steel Company, and all other stakeholders must realize that technology transfer is a complex and ongoing process. It is not like bringing a load of gravel and dumping it at some construction site. Dynamic and consistent activities are involved. To expect any developed nation to do it all for another country that lacks it is naive. Technology transfer will only take place when the Nigerian government and her people are determined and ready.

Limitations of the Study

The present exploratory study focused on Ajaokuta as a system. The Nigerian government and its political behavior was not treated as a variable.

The sample size obtained for the case of Negris Limited was low (29 usable responses). This arose from the great difficulty in obtaining sufficient responses from the company employees. It is likely that the low response rate affected results for Negris. Also, availability of more published data on Negris' performance (including its productivity, profitability, resource acquisition, employee job satisfaction, and its profitability) would have been helpful in further validating the instrument scale.

Potential drawbacks common to survey research include respondents' biases and deliberate efforts to protect values. These may not be ruled out in this study. Finally, the indicators for all the five effectiveness facets have been self-formulated largely from normative principles. Therefore, this study's conclusions are tentative, and further

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research could enhance the generalizability of the present results—for example, for external benefits other than determining effectiveness measures for Ajaokuta.

Suggestions for Future Research

This study has some significant implications for the growing body of research on organizational performance in different cultural settings. First, it provides further evidence that, if it is assumed that technological transfer is in the hands of the government and people of the developing world, more is required from management and employees of production industries in those nations. Indeed, Nigeria's Ajaokuta Steel Company's effectiveness, as examined here, is arguably more consequential and fundamental than that of any previous study on organizational effectiveness in Nigeria. This study shows, however, that organizational practices at Ajaokuta have not conformed with the rational, natural, and open system model of management. The performance levels were low in every respect that was examined.

While great effort was expended in designing the survey instrument, this researcher believes that it can be improved by coming up with more universal, mutually exclusive, and exhaustive indicators. It is possible that such an instrument will provide increased reliability and validity.

Additional research on organizations in the developing world is suggested. Thus far, research is scant on Nigeria's private and public organizations. Publications on public-sector organizations in Nigeria will also enhance research. At present there is scarce literature on public sector organizations. In particular, research to evaluate the effectiveness of Nigerian organizations is likely to produce improvements to such organizations and to the country as a whole. Also, research on the globalization of

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management theories, concepts, and practices in different cultural settings would offer improved effectiveness to organizations that exhibit unique traits.

Conclusion

Exploratory in nature, this study has been a useful first step in examining organizational effectiveness in a large manufacturing industry in Nigeria. The results present a realistic view of the effectiveness of the Nigeria's Ajaokuta Steel Company. The results indicate that, as expected, Ajaokuta is ineffective in its organizational behavior and work processes.

While according to the contingency theory, different management styles by two organizations of dissimilar cultures may produce the same level of effectiveness, the natural, rational, and open system model of management and an organization's practices due to its cultural setting are not mutually exclusive. The natural model requires that organizations attend to the social, psychological, and economic needs of their employees. The rational requirement implies the organizations must continually evolve innovative practices aimed at achieving economic organizational goals. Also, the openness of such a model requires that an organization affect its environment in such a way as to acquire necessary resources, transform itself, and make profits in the most effective manner. An open system model's objective is to secure an advantageous bargaining position in its environment and to capitalize on that position to acquire scarce and valued resources.

Under a rational model organizations are viewed as instruments for attaining goals.. The major criteria as they relate to this study's multivariate measures are productivity and profitability. The natural system model views organizations, in addition to attaining goals, as engaged in other activities required to maintain themselves as social

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units. The major criterion as it relates to the present study is employee job satisfaction. Indicators, as discussed earlier, include an organization's reward system, intrinsic and extrinsic, and the general work climate required to elicit contributions from employees that are adequate for survival. The open system perspective views organizations as being highly interdependent with their environment. The criteria emphasized focus on adaptability/flexibility, resource acquisition, and profitability. A rational, natural, and open system model accounts for much of the variance in measures of organizational effectiveness.

Management practices may be influenced by the legal rules, political conditions, and cultural characteristics of an organization's overall environment. Yet collaboration; innovation; and reward, encouragement, and empowerment of employees are, as suggested by the 48 indicators of the research questionnaire, essential practices in effective organizations. In those organizations suppliers are part of the collaborative work teams. Much of the difference in management styles relates to organizational structure.

The traditional top-down structure originated from a scientific approach to management. The present organizational structure of Ajaokuta serves as an example. Here the major functions are divided into operations, engineering services, power, real estate, utilities, commerce, finance, and management services (Figure 1). Usually each major division has subsidiary functions.

A different approach to the problem of organizational design is currently being adopted by several successful organizations. The structure for members of management is temporarily ignored in order to go back to the bottom, where the work is done. This newer approach, termed the bottom-up method of structuring organizations, has been

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found to yield higher organizational effectiveness. Organizing and leadership approaches are generally based on the performance task or situation.

ASCO's lowest effectiveness measure was adaptability and flexibility. This suggests that the organization fails to change its routine in response to environmental changes. It also suggests that the organization does not encourage changes in routinized organizational processes. Management must view its employees as a critical resource for ideas and information.

The second-lowest effectiveness measure in this study, was resource acquisition. The extent to which ASCO successfully interacts with its environment, acquiring scarce, valued resources for its effective operation, has been low. Critical alliances and connectivity with the various agents that are related to ASCO have not been sufficiently formed.

Job satisfaction, productivity, and profitability facets also produced low measures, suggesting ineffectiveness in those areas. To the extent that ASCO management adopts those practices guided by the rational, natural, and open system model, attaining effectiveness moves closer to reality. In this study appropriate indicators are found in the 48 structured statements.

In order to be successful in the global economy, large industries, public or private, must maintain an international connectivity to take advantage of constantly changing, innovative ideas. Innovation, initiative, and organizational learning must now be integrated into the organizational culture in the developing world in order to allow firms to take advantage of change instead of reacting to it.

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APPENDIXES

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Appendix A: Questionnaire

Please put a tick in the appropriate column, in front of each of the following statements:

1 means I strongly disagree

2 means I disagree

3 means I am not sure (Maybe)

4 means I agree

5 means I strongly agree

1 2 3 4 5

1. We employees think highly about our company.
2. There is a demonstration of trust (as shown by the practice of delegation of authority) by the management of this company.
3. The employees and managers express their feelings and ideas freely.
4. The management sets goals for all the employees to achieve, without asking for employees opinions (r).
5. The management always seeks the opinions of the employees before making decisions on matters that affect them.
6. When this company wants to respond to a change the management is usually not rigid about a particular method.
7. Our company believes in organizing teams comprising members from various departments, in order to carry out certain tasks.
8. This company believes in developing its employees by giving them regular training related to the job.
9. Members of this company are very friendly to one another.
10. The managers are very friendly to the employees in this organization.

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11. Looking at my job as a whole I am able to make many decision in the way I carry it out.

12. In this company, employees have the necessary tools and materials to properly carry out their tasks.

13. We employees participate in the decisions of our bosses (e.g. the supervisor asks for employees' opinion and suggestions).

14. When employees want to make a suggestion or a report it is not accepted unless it is made in writing and passed through the immediate boss (r).

15. Whenever my boss gives me a task, he expects results.

16. Our company encourages good performance by giving rewards and recognition to those who do well.

17. We employees always know the difficulty that our company is facing because the management keeps us informed.

18. Employees in our company are afraid to try any new approach. That is because if we fail, we will get into trouble with the boss(r).

19. Other than the annual evaluation, my boss never gives me any feedback about my day to day performance (r).

20. We employees know those things that are most important to accomplish and we work towards them.

21. We employees of this company are satisfied with the salary paid to us.

22. Our salary is always paid on time and regularly.

23. I am always excited to go to work everyday because I enjoy doing my work.

24. My boss does not care if I come to work everyday.

25. The company's goals are my goals.

26. We employees believe that there are attractive benefits to remaining a member of this company.

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27. We employees believe in the achievement of company goals.

28. The conditions of service, of all workers in this company are considered good.

29. Employees of this company will not do anything to damage the good name of the company since the company's success is the employees' success (that is, the company's interests take priority over personal interests). 30. To get employed by this company, one has to be competent. 31. The contractors supplying to this company are selected based on connection, and not by merit (r).

32. My company uses the quota system in filling up the management vacancies.

33. It is important to the managers and the chief executive of this company to meet all its production or service goals.

34. The goals of this company are clearly stated and understood by all workers.

35. The management of this company is committed to achieving results on their well formulated goals.

6. The management of this company is able to regularly secure the needed raw materials and other resources because of its commitment to the company's success.

37. When I am working on a task and I see my boss coming in my direction, I get afraid (r).

38. The managerial policies and practices of this company encourages the practice of honesty.

39. The position of the managing director/CEO is based on merit despite the fact that the government decides on its own on this matter (r).

40. The suppliers to the company are committed to delivering their items in good time.

41. The government is doing well by providing this company with needed funds.

42. This environment (geographical and resource availability) is quite suitable for this company.

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43. The influence of the government on this company is so much that they direct the company on what the company must do (including the price fixation of company products).

44. Major decisions concerning my company are directed by the government and/or institution outside of my company.

45. My company exchanges ideas with other companies that do this same kind of production (business).

46. My company and the community in which it is situated benefit from each other in the way of mutual assistance in social activities and community services.

47. The power failures, and the unreliability of the communication systems (phone, mail, fax, and others) contribute highly to the low performance of my company (r).

48. We employees enjoy doing our jobs because we care for one another.

*NAME (OPTIONAL): .....

DEPARTMENT: .....

GRADE LEVEL:.....

NO. OF YEARS IN EMPLOYMENT:.....

MALE OR FEMALE: .....

*Please note: This information is confidential and will not be revealed to anyone for any purpose.

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Appendix B: Facets of Effectiveness, Major Influences on Effectiveness, and Questionnaire Statements

Facets of effectiveness	Major influences on effectiveness	Statement serial #'s
Adaptability-flexibility	Environmental characteristics, Managerial policies and practices. Organizational characteristics	4, 6, 14, 17, 18, 35, 39, 43, 44, 45, 46, 47
Productivity	Organizational characteristics, Employee characteristics, Managerial policies and practices, Environmental characteristics	2 - 4, 6, 7, 9 - 25, 27 - 48
Job satisfaction	Employee characteristics, Organizational characteristics, Managerial policies and practices.	1 - 5, 8 - 13, 16, 17, 19, 21 - 28, 34, 38, 48
Profitability	Managerial policies and practices, Environmental characteristics	15, 20, 29, 30, 31 - 33. 35, 36, 39, 42, 43, 44, 47
Resource acquisition	Managerial policies and practices, Environmental characteristics, Organizational characteristics	11, 13, 15, 17, 18, 19, 21, 31, 33, 34, 39, 42, 43, 44, 45

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Appendix C: Instructional Letter to Facilitator

03-06-0
Dear facilitator,

Please recall our previous telephone conversations in regard to the completion of this questionnaire. It is important that participants indicate their own opinions only in responding to each of the 48 statements of the questionnaire.

Kindly inform the participants that this study is aimed at improving their company and that this will only happen if the responses are honest. In addition, there will be no assumptions made about responding in any particular way, and I will be the only one to keep the records of this data. Nobody else will have access to the submitted information.

It is suggested that the surveys be completed during company time. Each participant is to place the completed survey in a collection box located in a secure area. Putting names on the completed questionnaire is optional. Please provide all the privacy that the participants need as soon as the instructions have been made clear to them.

Kindly keep the completed questionnaires secure in your house until I arrange to collect them.

Thank you.

Engineer M. O. Ojo,
Researcher

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Appendix D: Ajaokuta Steel Company Industry Study: Questionnaire

The primary aim of this questionnaire is to attempt to influence higher effectiveness in the work process in the largest West Africa's steel- manufacturing firm. Please answer the following questions to the best of your knowledge.

1. What are ASCO's product lines? Ribbed bars, rounds, angles, channels, beams, hexagons strips

2. Who are the buyers of these products? Local consumers, distributors, other corporate organization like Julius Berger Construction Company

3. What are the complementary products? granite

4. What are the substitute products? none

5. Growth pattern:
(i) From 1980 to 1999, what is ASCO's growth pattern:
a. in terms of total production? Production at 88,000tons per mill from 1983 to 1988
b. in terms of expansion? 2 mills completed in 1983. By 1990, 98.8% of structural work was completed.
20% of staff were laid off in a downsizing exercise in 1990
(ii) What do you consider as another major determinant of growth? none

6. Technology of production and distribution:
(i) a. What is the cost of equipment installation? Wire rod mill at $117M. light section mill at $270M.
Name of contracting firms? TPE, Julius Berger, Dumez, Fougerolle
Name of consulting firms? PACSMECON
b. What are the major raw materials? Iron ore, limestone, dolomite, manganese ore, ferro alloys, coking coal.
c. How do you market your products? Through distributors and by direct purchases when in large quantities of at least 100 tons
d. Do you have market segmentation (branches)? Yes. Lagos, Kaduna, Abuja
e. What are your distribution channels (if indirect)? Registered stokists

7. Equipment maintenance
a. What company repairs and maintains your production equipment? Maintenance team specially trained to handle all equipment repairs
b. Would you say that when the equipment is idle, it is usually because of
(i) defect machine parts (ii) absence of raw materials (iii) operator shortage
(iv) other lack of funds

8. Supplies:
a. Who are your raw materials suppliers? Local contractors import items from abroad
b. What innovation (improvement) have they made in recent times to assure:

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(i) Better quality? Suppliers ensure that the products meet quality requirement
(ii) Timely delivery? Not much as there were sometimes delays
(iii) Cost reduction? None

9. Company innovation:
(i)What new ideas have you used in recent times to improve work processes:
a. In the Production line? Test staff periodically. When targets are not met, staff forfeit certain benefits
b. Various other technical staffs? Plan in motion to decentralize the commercial and the financial sections.
c. Support staff? Administrative. Staff help in carrying out disciplining measures.
(ii) How would you describe your organization working structure:
(a) vertical?(one line command) Yes
(b) matrix? (an employee having more than one boss)
(c) Integrative? (participants on a task comprises all that are affected in the production)
(iii) Who are involved with the company's strategies and decision making? Lower staff members are sometimes involved in decision making along with the senior management team.
(iv) What other factors (for example, government, trade unions, customers, local environment, or any other uncertainties) influence the company's strategies and decision making? Federal Government and the World Bank influenced the Federal Government to purposefully delay the operation.

10. Staff:
(i) An average official, at the level of AGM and above, has served for how many years in this company? 11 years
(ii) Which level of officials has the highest turnover (rate at which they leave the company)? Chief Executive. The higher the level the faster they leave.
iii) What do you think is responsible?
(a) a low pay (b) working conditions (c) other Political

11. Products:
(i) Does the rate of production match the rate of sales? Yes
(ii) What steps are being taken to reconcile the production/demand/sales processes? None

12. Competitive strategies:
(i) What do you consider the 'purposive' nature of this company (what are the goals)?
Short term? Manufacture steel for use in the country. Soviet Union, Britain, Brazil, and Spain supplied steel to Nigeria in the past.
Long term? Self reliance, basic to technological development
(ii). Do the top management officials attend international conferences on steel manufacturing management? Rarely
(iii). What is the volume of production?
(a) Now (for example tons/year) mills are idle at present

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(b) Projected for next ten years 5.2M tons/year

13. In order of importance, what are the 3 most important factors to ensure a continuous, efficient production?
(a) Funds from the Federal Government
(b) Completion of the steel plant
(c) Railway line to Warri to bring down the billets produced at Warri Rolling Mill
(d) Reduced interference by Federal Government

14. (i) Does the site training facility provide training for all the production phases or do you provide other specialized training abroad? On site training institution trains new technicians for all production phases.
(ii) Does ASCO collaborate with the technical institutions in Nigeria to introduce and design programs of study in metallurgy? Federal Ministry of Science and Technology is trying to arrange with ASCO to train students.

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EXPERIENCE:

11/91-PRESENT **NYC BOARD OF EDUCATION**
Tenured Teacher of Mathematics

9/94- 6/96 **COLLEGE OF NEW ROCHELLE,** Brooklyn N.Y.
Adjunct Professor of Mathematics.

3/82-9/91 **FEDERAL MINISTRY OF WORKS & HOUSING,** Ilorin, Nigeria
Chief Mechanical Engineer and Head-Engineering Services Dept.
Construction Manager on various capital projects.
In charge of maintenance and repair of all mechanical engineering facilities that included pumps, plumbing, and piping systems.

5/80-3/82 **SINGER COMPANY, LINK DIVISION,** Silver Spring, Md.
Systems Engineer II
Responsible for systems design, coding and systems check out for the nuclear power plant simulator.
Worked on design of hardware, such as recorders and meters.

8/78-8/80 **HOWARD UNIVERSITY,** Washington D.C.
Research Assistant
Performed research on fluid flow using the Laser Doppler Anemometer.
Taught engineering at the University of the District of Columbia.

EDUCATION:

8/78-5/80 **HOWARD UNIVERSITY,** Washington D.C.
Completion of all course work towards the Ph.D. Degree in Mechanical Engineering

8/76-5/78 **GEORGE WASHINGTON UNIVERSITY,** Washington D.C.
Master's Degree in Mechanical Engineering (Energy Technology)

1/73-5/75 **CATHOLIC UNIVERSITY OF AMERICA,** Washington D.C.
Bachelor of Mechanical Engineering.

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