TASK TECHNOLOGY, INDIVIDUAL DIFFERENCES AND

SATISFACTION - A TWO-COUNTRY STUDY:

VENEZUELA AND U.S.A.

By

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Scope and Method: The purpose of this study was to measure the
    moderating effects of individual differences on the relation-
    ship between task technology and job satisfaction, and to
    determine cultural differences if exist between fire service
    employees in Venezuela and U.S.A. Technology was measured
    by a qualified instrument (TMI) developed by Hitt and Middle-
    mist. Individual differences was measured by a higher order
    needs instrument developed by Hackman and Oldham. Job
    satisfaction was measured by the Job Description Index
    developed by Smith et al. The organizations used in this
    study offered some similarities in their working conditions,
    procedures, technologies, and equipment and tools. They
    also presented some differences identified as culturally
    and environmentally bounded.

Findings and Conclusions: This study did find some relationship
    between task technology and job satisfaction in one of the
    samples, although it was negative. It did not find that
    individual differences moderated this relationship. Some
    evidence was found indicating that the fire service has multiple
    subtasks   that are substantially different. This is worth
    of further research to examine the same relationship for each
    "sub-job" separately. This study also found that cultural and
    environmental differences exist that affect employees' reaction
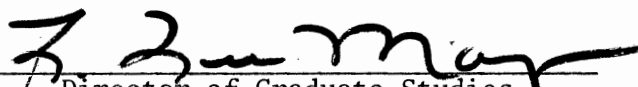   to their jobs.

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TASK TECHNOLOGY, INDIVIDUAL DIFFERENCES AND

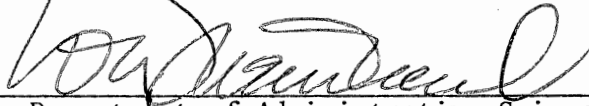SATISFACTION - A TWO-COUNTRY STUDY:

VENEZUELA AND U.S.A.

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CHAPTER I

INTRODUCTION

Cross-cultural studies have gained in importance since the publication of Harbinson and Myers (1959)'s work in which they presented descriptive comparisons of management practices in twelve different countries. Since then many management scholars have given more attention to managerial systems and procedures in different nations (e.g. Barret and Bass, 1970; Davis, 1969; Gough, 1964; Haire, Ghiselli, and Porter, 1966; Kakar, 1971; Kraut, 1975; Negandhi, 1974; Neghandhi and Robey, 1977; Peterson, 1972; Robey, 1974; Whitehill, 1964). From the late 1960's on much work has been done in the area of Comparative Management (Boddewyn, 1970; Negandhi, 1974; Negandhi and Prasad, 1971). This study replicates a research on the relationship of job satisfaction and task technology with individual differences (Growth Need Strength - GNS) as a moderator. The original research study by Hitt and Cash (1979) used a medium sized industrial organization because it offered several subunits with different technology levels across them. This study uses two samples from similar organizations in two different countries: USA and Venezuela. The organizations chosen for this work were Fire Departments of comparable size and work load.

The purpose of this study is to measure the moderating effects of individual differences in the relationship between task technology and job satisfaction in both samples, and to determine if cultural differences exist between fire service employees in Venezuela and the U.S.A. Some difficulties encountered when applying instruments developed in English language to a Spanish speaking population in a developing country are noted and some observations for future cross-national research are discussed. There are some cultural

differences present between the two populations, though they are both considered to belong to the western world and one country has markedly influenced the other in many aspects of life through many years of trade, transfer of technologies, and other commercial, political, social and cultural relations.

Objectives of Cross-Cultural Research

A major purpose of a cross-cultural replication is to determine the influence of cultural differences on pre-tested or widely proven relationships among organizational variables in American organizations. Put another way, the object of cross-cultural research should be to find relationships among variables and not describe them (Roberts, 1970). This will hopefully allow for a better understanding of the cultures involved which could be helpful in improving future relations among nations, since cross-culture research will facilitate the study of similarities and differences between two or more cultures. We should be able to learn how to better use the similarities and to overcome the differences in order to enhance and to improve the application of our knowledge across national boundaries.

Another very important role of cross-cultural studies is the reassessment of existing theories and instruments. Since the major part of organization theory has been developed in North America, it could justify our tendency to choose as a frame of reference the American model of management for the majority of cross-cultural research studies (Ferrari, 1974). This orientation would peruit study of the universality of organizational theories which has not

been clearly determined, yet. Comparative management research could also help in clarifying the reasons why what works in U.S.A. does not work in some other different cultures or nations (e.g. Davis, 1969; Negandhi, 1975; Negandhi and Robey, 1977; Simonetti and Simonetti, 1978). Finally, other purpose of cross-national studies may be helping practitioners to develop and design more effective foreign divisions for multi-national corporations, or to find most effective ways for transferring technology, or to achieve the most effective use of the resources available in each culture.

Choice of Organization

The fire service in U.S.A. employs about two-hundred thousand full paid fire fighters and there is an even higher number of volunteer firemen all dedicated to same basic activity. There is also a fire related death toll of about twelve thousand people, and many more are injured. These occur in about three million fires in this country every year (Karter, 1979). The fires also are the cause of deaths for a hundred of firemen and a considerable amount are injured every year (Karter, 1979; Washburn, Harlow and Hom, 1980). Due to these figures the U.S.A. has gained the reputation of having a union fire problem, in much greater proportions than in any other industrialized nation (National Fire Protection Association - N.F.P.A., 1976; McClenan, 1973). But, despite these statistics the amount of research done on fire service and protection matters is very low. In a review of the literature on the subject Swersey and Ignall (1980) reported the major aspects of fire protection covered by 1,200 articles published before 1976. According to their findings the

areas given the most attention were all in the technical side of
fire protection.[1] Very little has been done on the aspects of
organizational behavior, organizational theory, and personnel
development even though the need for research and applications of
these topics is very high (e.g. Coulter, 1979; Marks, 1979;
Matarazzo, Allen, Saslow, and Wiens, 1964). But we have to recog-
nize that now many efforts are been made from within the fire
service for increased study and applications of management theories
(e.g. McCarthy, 1975; Onieal, 1977; Shearer, 1980).

This increased interest in the study and use of management
theories in the fire service may be due to two factors. The first
is that the number of programs in fire science and fire administra-
tion is increasing in colleges and universities across the country.
The second factor is that more and more supervisors and employees
in the fire service are getting advanced degrees in management
(MBAs) and public administration. Still the field of organizational
theory and behavior in the fire service is relatively unexplored.
Thus it was chosen as the samples for this study. Other reasons
why the fire service appealed to us as very convenient samples in
a cross-cultural study are their similarities in several of the
technical and operational aspects. This will be broadened in
coming sections of this paper.

Endnotes

1. See publications such as Fire Journal; The New York City - Rand Institute and others. See also, John D. Finnery; "How Often Will the Firemen Get their Sleep?", Management Science, Vol. 23, No. 11, (1977), 1169-1173; P. W. Lemon and R. T. Hermison, "The Human Energy Cost of Fire Fighting", Journal of Occupational Medicine, Vol. 19, No. 8, (1977), 558-562; Thomas V. Pipes, "Physiological Responses of Fire Recruits to High Intensity Training", Journal of Occupational Medicine, Vol. 19, No. 2, (1977), 129-132; Casey Ichniowski, "Economic Effects of the Firefighters' Union", Industrial and Labor Relations Review", Vol. 33, No. 2, (1980), 198-211; Donald R. Plane and Thomas E. Hendrick, "Mathematical Programming and the Location of Fire Companies for the Denver Fire Department"; Management Science Report Series (No. 74-9), University of Colorado, 1974, as good examples of the research trend in the fire service.

CHAPTER II

LITERATURE REVIEW

INTRODUCTION: TECHNOLOGY, INDIVIDUAL DIFFERENCES

AND SATISFACTION

The implications of job design have been known since the late

1700s when the industrial revolution was born in Europe, and brought

with it a complex of technological and human relations problems to

managers. Aldag and Brief (1979) discussed this point and noted

that an English writer, Charles Babbage, was probably the first one

to emphasize that managers deal with these problems scientifically

and not relying on guesses and intuition, although they recognize

that Frederick W. Taylor gets the credit for being the initiator

of the scientific management movement which, among other things,

dealt with (a) selecting, training, and compensating the employee,

(b) designing jobs and tools, and (c) given management the task of

gathering the information possessed by the employee, transforming

this information in such a way to allow management the setting of

rules and procedures that would lead to the standardization of jobs.[1]

The major consequence of this movement on the economic world is

today's level of industrialization.

Another consequence of the industrial movement was routini-

zation and standardization. Many scholars of employee behavior

began to question whether or not the costs of negative and unexpected

outcomes of job simplification and standardization, such as turnover,

absenteeism, job dissatisfaction, and others offset the benefits

of routinization (e.g. Blauner, 1964; Likert, 1961; MacGregor, 1957;

Walker, Guest, and Turner, 1956). Since then the field of job

design has attracted a large number of scholars and practitioners

who have done research on the topic and studied practical applica-
tions of this concept (e.g. Aldag and Brief, 1979; Blauner, 1964;
Ford, 1969, 1969A; Hackman and Lawler, 1971; Hackman, Pierce and
Wolfe, 1978; Hersberg and Rafalko, 1975; Herzberg and Zautra, 1976;
Hitt and Cash, 1979; Hulin and Blood, 1968; Kim and Hamner, 1976;
Onieal, 1977; Schwab and Cummings, 1976; Turner and Lawrence, 1965;
Umstot, Bell, and Mitchell, 1976).

Related Research

Every time we are dealing with problems of job design what we
are looking for is a fit between different organizational variables.
This fit has been recognized in many earlier studies that emphasized
the relationship between technology and organization structure
(e.g. Child and Mansfield, 1972; Hickson, Pugh and Pheysey, 1969;
Lawrence and Lorsch, 1969; Perrow, 1970, 1972; Thompson, 1967;
Woodward, 1965). Other literature emphasizes the relationship
between technology and other organizational variables such as
structure, size, workers' responses to their jobs, performance,
climate (Blauner, 1964; Child, 1973; Leavitt, 1976; Hitt, 1976;
Hitt and Cash, 1979; Mahoney and Frost, 1974; Peterson, 1975). The
major emphasis of the earlier research has been focused on the
interaction of technology with other organizational variables such
as structure, employee satisfaction (e.g. Hackman and Lawler, 1971;
Hitt and Cash, 1979; Schwab and Cummings, 1976; Hackman, Pearce,
and Wolfe, 1978). This has led many scholars to recognize that job
design and task technology are strongly related, and both concepts
may have similar characteristics (Hitt and Cash, 1979). Although

most of the earlier research focused on the dominant "core
technology" of the total organization (Hickson, Pugh and Pheysey,
1969; Perrow, 1970, 1972; Thompson, 1967; Woodward, 1965), other
literature makes it clear that technology has a more persuasive
effect on organizational behavior (Blauner, 1964; Hitt, 1976; Hitt
and Middlemist, 1978; Hitt and Cash, 1979; Mahaney and Frost, 1974;
Rousseau, 1977, 1978). Further, there is some evidence that multiple
technologies may exist within organizations (e.g. Lynch, 1974).
Technology and job design are firmly tied together. However, job
design is a micro organizational variable, and most of the research
on technology has been focused on the macro organizational level
(Hickson, Pugh, and Pheysey, 1969; Leavitt, 1976; Perrow, 1970, 1972;
Thompson, 1967; Woodward, 1965). In most recent studies there is
an increasing emphasis on the micro organizational effects of
technology on other variables at the subunit technology (Hitt, 1976;
Hitt and Cash, 1979; Hitt and Middlemist, 1978; Mahoney and Frost,
1974; Rousseau, 1977, 1978; Vardi and Hammer, 1977; Schwab and
Cummings, 1976).

Since the topic of workers' satisfaction with their work has
been the focus of attention for many scholars in the last forty
years (Aldag and Brief, 1979), and job design is an important
variable that affects satisfaction with the job, much of the
research and writings on the design have emphasized its relation-
ship to employees' satisfaction with their jobs.

Although technology has been related to different organizational
variables, our major emphasis for purposes of this study is on its
relationship to job satisfaction, as strongly suggested by the

recent literature. It is understood that when we refer to technology
we are addressing technology differences at the subunit or job
level rather than the dominant "core technology". The concept
of technology at the subunit level has been used in recent research
(Mahoney and Frost, 1974; Comstock and Scot, 1977; Hitt, 1976;
Hitt and Middlemist, 1978; Rousseau, 1977). Jackson and Morgan
(1978) report some research findings by Hitt (1976), and Hitt and
Morgan (1975). According to Jackson and Morgan, when studying
the relationship between organization climate and effectiveness,
Hitt found technology at the subunit level as an important factor
in determining those dimensions of organization climate that related
to effectiveness. Hitt classified the subunits according to Thomp-
son's typology of technology and found that dimensions of climate
that related the most with effectiveness varied according to the
dominant technology of the subunit. These findings are broadly
emphasized in some other research and writings (e.g. Porter, Lawler,
and Hackman, 1975).

Job Satisfaction and Technology

Probably one of the most interesting topics in organizational
behavior is the relationship between job satisfaction and task
technology. This may be due to the fact that the literature indi-
cates that the variable technology presents the most persuasive
effect on organizational behavior (Blauner, 1964; Mahoney and Frost,
1974; Peterson, 1975; Hitt, 1976; Rousseau, 1977, 1978). Thus we
find a rather large amount of research on the relationship between
technology and workers' satisfaction with their job as well as the

relationship between technology and other organizational variables such as structure, management style, effectiveness, etc., (Burns and Stalker, 1961; Lawrence and Lorsch, 1969; Walker and Guest, 1952; Hitt, Hromas, and Womack, 1978; Blauner, 1964; Hulin and Blood, 1968; Miles and Petty, 1975).

Even though job satisfaction has been defined in different ways, we will use the definition given by Smith, Kendall, and Hulin (1969). "Job satisfaction" is defined as the feelings a worker has about his job. We find that the most common organizational dimensions of job satisfaction used by researchers are: (a) work itself - tasks performed, control over the work, discretion allowed, etc; (b) the organization and its management; (c) direct supervision; (d) reward system; (e) peers or co-workers; (f) promotion system; and (g) general working conditions. These factors may have more or less emphasis in different studies, but when examining a number of pieces of research, these are the most commonly used as sources of workers' satisfaction with their jobs.

Walker and Guest (1952) carried out a large-scale study on the reactions of more than 1,000 assembly workers to their jobs at an automobile plant and found very high levels of job dissatisfaction, absenteesism, and turnover among employees in highly routinized, machine-paced assembly line jobs.

Job satisfaction is a very complex subject of organizational behavior, and this characteristic has been demonstrated in previous research. Herzberg, Mausner, and Snyderman's (1959) "two-factor" theory of dimensions of satisfaction as satisfiers and dissatisfiers has been very controversial; and still has not found strong support

in later empirical works (e.g. King, 1970). Research findings
have demonstrated that job satisfaction is much more complex in its
dimensional relations than postulated by Herzberg et al. (1959),
and that it is a human characteristic which is of great importance to
people in their jobs. Vroom (1966), in a review of the literature,
has reaffirmed that job satisfaction very likely is a complex of a
number of interacting variables, and recent research has dealt many
interacting variables that may have some effects on job satisfaction
(e.g. Edwards, 1975; Hitt and Cash, 1979; Hulin, 1966, 1969; Katzell,
Barret, and Parker, 1961; Mitchell, Smyser, and Weed, 1975; Rabinowits,
Hall, and Goodale, 1977; Sundstran, Burt and Kamp, 1980). Many have
found that different variables have had effects on the degree of
workers' satisfaction with their job. It is interesting to note that
according to Work in America, a considerable number of American workers
are dissatisfied with the quality of their working lives.

Research on the field of technology and job satisfaction relation-
ship is rather extense. Walker and Guest (1952) found that workers
in routinized jobs on the assembly line presented high levels of
dissatisfaction with their jobs. Blauner (1964) and Woodward (1965),
each working with different typologies of technology, reached a
similar conclusion that a significant relationship exists between job
satisfaction and technology. Woodward's work considered technology
as an integral part of the formal organization, and classified
technology by the technical complexity of the production process.
She found life on the assembly line (large batch and mass) to be less
pleasant and linked with the pressures and stresses produced by batch
production.

Blauner (1964) studied four different technologies. A print shop, a textile mill, an automobile assembly line and a highly automated chemical plant. He assumed a multidimentional approach to alienation in modern factory technology: (a) powerlessness exists when workers cannot control their job activities; (b) meaninglessness exists when workers contribute insignificantly to the total product; (c) social alienation is present when workers feel that they do not belong to those work groups; and (d) self-estrangement exists when workers view their work as a means to some other end as making money, instead of as a means of personal self-fulfillment. Blauner found that powerlessness had the greatest impact on workers' satisfaction, and that jobs utilizing lower levels of technology (e.g. less discretion, repetitive) lead to lower worker satisfaction with his job.

Several criticisms of Blauner's work have been overcome by more recent research that have reported similar results on the relationship between job satisfaction and technology (Hackman and Lawler, 1971; Rousseau, 1977, 1978; Porter, Hackman, and Lawler, 1975; Hitt, Hromas, and Womack, 1977; Hitt and Cash, 1979; Brief and Aldag, 1975). For example, Porter, Lawler, and Hackman (1975) report recent research results that give support to the proposition that repetitive, machine-paced assembly jobs present high levels of job dissatisfaction. They advocate that jobs with more variety and meaningfulness (jobs with higher levels of technology) produce higher levels of satisfaction. Hitt, Hromas, and Womack (1977) working with Thompson's (1967) and Mahoney and Frost's (1974) operational definitions (long-linked, madiating, and intensive) studied subunits with different technologies and found job satisfaction to vary by technology. The results

showed that workers in the mediating technology had higher satisfaction with their work than those workers in long-linked technology giving support to earlier research. However, and inverse U-shaped relationship was found in that the mediating technology group showed also more satisfaction with their work than the intensive technology group, and this did not support earlier research. Thus other factors may affect the relationship between technology and job satisfaction.

Moderating Effects of Individual Differences

The process of job enrichment produces jobs at a higher level of skill, with varied job content and increased relative autonomy for the worker. Thus we may assume that when a job is redesigned (for example, through job enrichment) its technology level is also affected, although there have been few works to link the two concepts together (Hitt and Cash, 1979). There is some empirical support for the relationship between task technology and job satisfaction (e.g. Rousseau, 1977, 1978; Hitt and Cash, 1979), as there is for job design and job satisfaction. However, Rousseau (1978) suggested that further research should study the potential moderating effects of individual differences.

There are much research on job design and workers' responses to their jobs that have investigated the possible moderating effects of individual differences. Hulin and Blood (1968) reached the conclusion that the positive relationship between job size and satisfaction with the job cannot be generalized but rather is dependent on the background of the workers. They also discussed the weaknesses of the traditional model in which short-time-cycle, simplified jobs lead to

monotony. Monotony is associated with feelings of boredom and job dissatisfaction. And boredom and job dissatisfaction lead to undesirable behavior (absenteeism, turnover, restriction of output). The authors questioned repetitiveness leading to monotony on the facts that effects of individual differences and positive motivational characteristics of repetition. The second assumption - monotony leads to boredom and job dissatisfaction, is questioned on the grounds that as some research findings has demonstrated that some workers prefer routine, repetition, and specific work methods to change, variety, and decision making. The last assumption that boredom and job dissatisfaction are associated with undesirable behavior, is questioned in the fact that it has been so difficult to obtain support for this relationship in the research done on the topic.

Research findings by Turner and Lawrence (1965) suggest that workers respond in different ways to similar job characteristics. These results and Hulin and Blood's (1968) suggest that the strong belief that the value enriched jobs for all may be questioned. These two pieces of research seem to emphasize that specific individual differences must be taken into account with the characteristics of their jobs in order to generate valid predictions about workers' responses to their jobs. In both cases the authors deal with individual differences on a sub-cultural or sociological level, such as differences between town and city workers.

Other literature has concentrated on the influence of sub-culture characteristics (i.e. community characteristics; location of the organization, etc.) and has found that some characteristics of the community in which the organization functions are related to satis-

faction with the job and with life (Hulin, 1966, 1969; Wild and Kempner, 1972).

Hackman and Lawler (1971) suggested that specific individual differences may be more important than the background of the workers, and recommended that the direct measurement of these differences at the individual level would seem to be of high merit. According to the authors, the sub-cultural approach assumes homogeneity of worker characteristics and workers' responses to their jobs within groups - an assumption that is not needed when including individual differences at the individual level. Hackman and Lawler analyze workers' responses to their task characteristics in terms of expentancy theory, and suggest that workers are more satisfied with jobs providing outcomes that they perceive as relevant. The authors propose that an individual showing higher order need (high growth need strength - GNS) would be more satisfied with a job in which he is more responsible for a meaningful part of his work, receives intrinsically meaningful out-comes, and is provided with feedback to his accomplishments.

A number of recent studies has been concentrated on job design and workers' responses to their jobs studying the potential moderating effects of individual differences. Some findings suggest that an individual's growth need strength (GNS) may have moderating effects on the relationship between task characteristics and workers' responses to their jobs (Aldag and Brief, 1975; Hackman and Lawler, 1971; Robey, 1974; Oldham, 1976). However, other research findings have found only weak support for the moderator effects of GNS (Brief and Aldag, 1975; Rabinowitz, Hall, and Goodale, 1977; Hitt and Cash, 1979). Stone (1976) and Shepard (1970) failed to find moderating effects of

indivdual differences in response to the endorsement of protestant work ethic in the former and alienation from work in the later. Wanous (1974) used direct comparisons of the usefulness of (a) higher need strength, (b) endorsement of protestant work ethic, and (c) urban vs. rural background as moderators of workers' responses to job characteristics. The three variables were determined to have some effects as moderators, with the GNS measure as the strongest and urban-rural measure the weakest.

Improving some shortcomings of earlier research, Hitt and Cash (1979) used a subgrouping strategy with high, medium and low GNS groups to study the potential moderator effects of GNS in the job characteristics - job satisfaction relationship. This strategy overcomes the criticisms to earlier research. For example, Wanous (1974) used the median to separate individuals into two groups - high GNS and low GNS. Hackman and Lawler (1971) and Aldag and Brief (1975) worked with the top and the bottom one-third of the overall scores distribution to represent the high and low GNS groups, respectively, but the middle one-third of the respondent are not studied. Stone, Monday, and Porter (1977) did use high, medium, and low groups on need for achievement scores, but they found that need for achievement may not be related to growth need strength. However, they found that the job scope-satisfaction relationship was significantly lower for high need achievers than for low and middle need achievers. Hitt and Cash (1979) found a positive relationship between task technology and job satisfaction which supports the work of Rousseau (1977, 1978) and Hitt, Hromas and Womack (1978), and GNS was found to be a weak moderator of this relationship.

The Cross-Cultural Approach

Cross-cultural studies performed in the past are mainly descriptive comparisons of management practices. For example, Harbison and Myers (1959) conducted a study in twelve different countries (England, U.S.A., Chile, Israel, U.S.S.R., India, Egypt, France, Italy, Japan, Germany and Sweden). More recently, Haire, Ghiselli and Porter (1966) conducted a survey in fourteen countries to measure managerial attitudes across five cultural clusters: (a) Denmark, Germany, Norway, and Sweden; (b) Belgium, France, Italy and Spain; (c) England and U.S.A.; (d) Chile, Argentine and India, and (e) Japan. This study goes further than earlier works, but still lacks a fundamental theoretical framework. This study presents similarities and dissimilarities of general tendencies of managers and their attitudes across cultures. The criteria applied in forming the clusters may be questioned in this study, because there are some countries in which beliefs, values, norms, ideals and attitudes, which are used in defining cultures, may vary widely between them. For example, between Argentine and India there are many differences in most of the characteristics just mentioned.

It is likely that the most important and broadest review of cross-cultural research related to organizations is the work presented by Roberts (1970). She included 526 publications and categorized them into 26 substantive areas. About 46 percent of the publications were simply discussions, and the rest of them provided some empirical work, and most of the work was originated in the United States. The author mostly concentrated in examining research done between 1962 and 1969 and included few important earlier works.

Roberts classifies the findings on the basis of the level of abstraction from which the organization is viewed. Thus, she presents the following major areas: (a) Characteristics of Individuals in Organizations which includes findings in attitudes and values, leadership, motivation, communication, and problems areas; (b) Organizational Subunits, which covers management styles, conflict and cooperation, group decision-making, deviance and conformity, efficiency, and communication; and (c) Organizational Totalities in which most of the studies deal somehow with organizational structure. However, the author notes that another aspect, the relationships of organizations with each other (Organizational Interactions) is not generally considered in the cross-cultural research.[4]

One of the major concerns expressed by Roberts (1970) in cross-cultural research is that there is not a concise definition of "culture". She expresses "without some theoretical notions explaining culture and predicting its effect on other variables, we cannot make sense of cross-cultural comparisons. The problem is to explain the effects of culture on behavior, not to make inferences about behavior in spite of culture".[5] The same point was raised by Negandhi (1974), who says that culture is used as a residual variable, to explain whatever is left, rather than an explanatory or independent variable. Other research reports also express some concern about the definition of culture (e.g. Ajiferuke and Boddewyn, 1970; Kraut, 1975). In this study we will define culture as "the totality of socially transmitted behavior patterns, arts, beliefs, institutions, and all other products of human work and thought characteristic of a community or population".[6]

Davis (1968) analyzes four critical areas in which the North

American business person can improve his management style when operating
in Latin America. The four areas considered were: (a) the individual;
(b) the group; (c) the organization, and (d) the community. The author
emphasizes that the U.S. business manager and his Latin American counter-
part attach radically different meaning and importance to each of these
successively larger social units. One criticism is that of the uniform
treatment the author gives to such a broad area such as Latin America.
According to our adopted definition of culture, there are a number of
different cultures in the Latin America. Thus, some generalizations
may not hold true across Latin American countries. Whitehill (1964)
studied how workers feel about reciprocal obligations in employee-
employer relations, and the influence that cultural values have on
employee attitudes affecting the former relationship. The author uses
a sample of 2,000 production workers, equally divided between Japan
and U.S.A., and employed by somewhat comparable firms. He did find
that cultural forces indigenous to a given society tend to mold the
attitudes of workers as to what they may reasonable expect from good
management. They also found that the reciprocal obligations which they
as good workers are willing to extend to management are normally
culturebound.

Most of the cross-cultural research have demonstrated that
cultural dimensions have influences on many aspects of organizational
behavior (e.g. Peterson, 1972; Rosey, 1974; Negandhi and Robey, 1977;
Simonetti and Simonetti, 1978; Davis, 1969; Haire, Ghiselli, and Porter,
1966; Harbinson and Myers, 1959; Whitehill, 1964; Kraut, 1975). In
their theoretical discussion, Negandhi and Robey (1977) suggest a model
to test the impact of cultural and environmental factors on worker

responses to jobs. This research design was originally developed by Robey (1974). The model as illustrated in Figure II-1, includes cultural and environmental influences as affecting dimensions such as work values, motivation, and achievement (Robey, 1974; Negandhi, 1974; Hulin and Blood, 1968; Hulin, 1966). The interaction of work values with the objective task attributes (complexity) then causes variation in worker response (performance, satisfaction) to the job. However, the results of the research and writings on the cross-cultural field suggest that more research is required to determine how cultural dimensions affect behavior in organizations.

FIGURE 2-1

Research Design to Test the Impact of Cultural and
Environmental Factors on Worker Response to the Job

```
┌─────────────────┐
│ Culture         │
│   Religion      │──────┐         ┌─────────────────┐        
│   Family        │      │    ┌───→│ Work Values     │────┐
└─────────────────┘      │    │    └─────────────────┘    │
                         │    │            │              │
                         │    │      (Socialization)      │
                         │    │            │              │    ┌─────────────────┐
                         │    │            ↓              │    │ Work Response   │
┌─────────────────┐      │    │    ┌─────────────────┐    │    │   Job Satisfaction
│ Environment     │      │    │    │ Achievement     │────┘    │   Job Performance
│   Location      │──────┘    └───→│ Motivation      │         └─────────────────┘
│   Frame of      │                └─────────────────┘              │
│     Reference   │                                                 │
└─────────────────┘            ┌─────────────────┐                  │
                               │ Task Attributes │──────────────────┘
                               │ (Job Complexity)│
                               └─────────────────┘
```
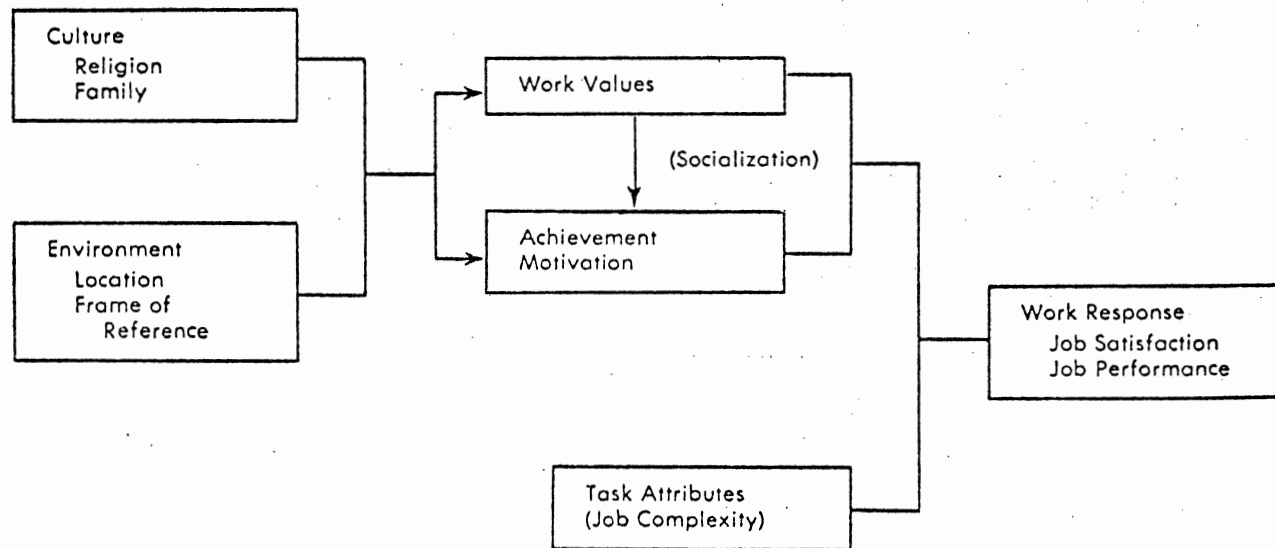
SOURCE: Daniel Robey, "Cultural and Environmental Determinants of Worker Response: A Research Model,"
Management International Review, Vol. 14 (2-3, 1974) 75.

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Endnotes

1. This discussion was drawn from Ramon J. Aldag and Arthur P. Brief, Task Design and Employee Motivation; Glenview, Illinois: Scott, Foresman and Company, 1979.

2. For further details see Michael A. Hitt, Technology: An Intervening Variable in the Relationships Between Organizational Climate and Work-unit Effectiveness", Proceedings Academy of Management, 35th Annual Meeting, New Orleans, August 1975. See also Michael A. Hitt and Cyril P. Morgan, "The Relationship of Organizational Climate to Dimensions of Work-Unit Effectiveness", (Stillwater, OK: Oklahoma State University, March, 1975) unpublished working paper.

3. For any one willing to undertake research work on the cross-cultural field, it may be useful to take Roberts' (1970) work as an initial frame of reference. In her review she offers the student of organizations valuable information about this specific topic.

4. From Karlene H. Roberts, "On Looking at an Elefant: An Evaluation of Cross-cultural Research Related to Organizations", Psychological Bulletin, Vol. 74, No. 5, (1970): 327-350.

5. This definition of culture is taken from The American Heritage Dictionary of the English Language. William Morris (Ed.), Boston, Mass: Houghton Miffin Company, 1976.

CHAPTER III

THEORY AND HYPOTHESES

THE FIRE SERVICE: A COMPARATIVE DESCRIPTION

It was stated earlier in this paper that the bulk of the research

studies related to the fire service has been primarily concentrated in

technological and scientific aspects of fire prevention, fire sup-

pression, early detection, and sprinklers, fire companies allocation,

and others (Swersey and Ignall, 1980). However, there is not a

significant amount of research on organizational behavior within the

fire service, although the profession of firefighter is considered as

the most risky in the U.S. (e.g. The National Comission on Fire Pre-

vention and Control, 1973; McCarty, 1979). Swersey and Ignall (1980)

in their review of the literature, point out the major research needs

in the fire service. Within their priorities for research there are

many operational aspects of the fire service, but there is no indica-

tion given about the need for research on organizational behavior

within the fire service. However, the fire service in 1978 had

221,000 employees in the U.S.[1] Every year, about 100 firefighters

die in the line of duty and about 50 thousand are injured in fires

or other profession-related activities (NFPA, 1976; NCFPC, 1973;

Karter, 1979a; McClenan, 1973; Washburn, Harlow and Hom, 1980).

According to Marks (1970) the importance of studies on the fire

service is based on the fact that adequate fire protection is manda-

tory for the safety and welfare of the community in which it operates.

It is important to present a description of the fire service, because

this type of organization is rather unique in many aspects. Its

functioning is different to any other organization, the activities

it performs conform to a monopoly, and the work itself is unique.

So far we have presented two characteristics of the fire service;
its importance to community and its uniqueness as an organizational
setting. Both of these characteristics hold true in either of the
countries involved in this study: Venezuela and U.S.A.

The objectives of the fire protection service are also almost
universally accepted. The general objectives of this organization
are:

1. To prevent fires from starting,

2. to prevent loss of life and property when a fire starts,

3. to confine a fire to the place it started, and

4. to extinguish the fire.[2]

These objectives are common to both fire departments considered in
this study. However, some added objectives have been found in the two
departments. Both departments deliver rescue service which could be
considered as an extension of objective number two, because this
rescue service does not require the presence of fire to be rendered.
A slight difference is that the Venezuelan Fire Department controls,
supervises, and delivers the ambulance service to the city it serves.
It is important to point out that there has been a considerably amount
of technology transferred from American fire services to the Venezuelan
counterpart. This fact makes our study more worthwhile, and it meets
the criteria set by Roberts (1970) and Kraut (1975) in the purpose of
cross-cultural studies.

In order to better understand the type of employees we are dealing
with, it must be useful to present a description of a firefighter:

"...is a full-time municipal employee, who under supervision,
protects life and property, controls and extinguishes fires,
maintains fire stations and equipment, and performs related

work as required. Typical tasks may include rescuing persons
from burning structures and dangerous areas, extinguishing
fires, responding to public emergencies that require wide
exercise of police authority and expert technical skills in
the use of firefighting tools and equipment, administering
first aid, assisting in the enforcement of fire prevention
laws and ordinances, preventing unnecessary damage from
smoke and water, studying, training, and drilling."[3]

Another important description is that of the institutional setting

of the fire service which will help us appreciate the interpersonal

contact in the work environment and activity of a firefighter. The

firefighters work, eat, study and play, in the confines of the fire

station with constant interpersonal relations for twenty-four hour

periods.[4] They normally remain in the fire station while waiting for

an emergency to occur, which means that the majority of a firefighter's

time is spent among the other members of the group (Marks, 1970).

According to Marks (1970), in the firefighter's life privacy, either

physical or mental, is almost nonexistent. This lack of privacy may

affect the level of satisfaction with the job. Sundstrom, Burt, and

Kamp (1980), studying three employee groups (clerical, mechanical, and

administrative) found that both, architectural and psychological pri-

vacy, are related to satisfaction with work spaces and job satisfaction.

These working conditions are similar for both the sample from the

American fire department and from its Venezuelan counterpart. However

there is a difference in the two organizations. The American sample

works 56 hours a week (24 hours on by 48 hours off), and the Venezuelan

sample works 84 hours a week (24 hours on by 24 hours off).

The selection process in both cases is the same (includes the same

steps). The only thing known about firefighter applicants is that

they come from a broad variety of backgrounds, but have been described

as having the mental ability to complete college, and are average in

physical ability and medical criteria (Matarazzo, Allen, Saslow,

and Wiens, 1964). However, it is not possible to make generalizations

from just one study because these results apply only to one American

sample. There are some differences between the two fire departments,

which are created in part for cultural and environmental influences.

These aspects of differentiation will be presented as we describe

our hypotheses.

Hypotheses

This study is replicating an earlier research by Hitt and Cash

(1979), in which they found a positive relationship between task

technology and job satisfaction, giving support to Hackman and Lawler

(1971) and Brief and Aldag (1975) who suggested that technology and job

satisfaction may be related. Hitt and Cash also give support to Rousseau

(1977, 1978) and Hitt, Hromas and Womack (1978) that found relationships

between task technology and job satisfaction. Hitt and Cash's (1979)

job is probably the first one that attempted empiral work to test the

moderating effects of individual differences on the relationship

between task technology and job satisfaction. The moderating effects

of individual differences (growth need strength -GNS), had been suggested

for some (e.g. Hulin and Blood, 1968; Turner and Lawrence, 1965; Hackman

and Lawler, 1971).

There is not reason to believe that Hitt and Cash's (1979) find-

ings cannot be encountered in the American sample of fire fighter as

well as the Venezuelan sample. We have described both organizationa as

having the same objectives, using similar procedures, presenting the

same working conditions, and other similarities. There are, however, some differences, but we believe that these differences, mostly cultural and environmentally, will affect some dimensions of satisfaction, such as supervision, pay, and promotion. In the other two dimensions, people and work, the cultural and environmental effects will be minimum, because in those two aspects of satisfaction with the job is where most of the similarities between the two organizations exist. So the following set of hypotheses applies to both organizations:

Hypothesis 1: A positive relationship exists between task technology and satisfaction with work.

Hypothesis 2: The positive relationship between task technology and satisfaction with work is moderated by individual growth need strength.

Hitt and Cash (1979) decided that if GNS is found to be a significant moderator, the data collected will be subgrouped using hierarchical cluster to obtain three (high, medium and low) GNS groups. The same procedure will be used in this study. Thus it is further hypothesized:

Hypothesis 3: There is a positive relationship between perceived task technology and satisfaction with work in each of the three GNS groups.

Hitt and Cash (1979) found no relationships between task technology and other job satisfaction's dimensions (co-workers, supervision, promotion and pay). The present study will retest these results:

Research Question 1: Is there any relationship between perceived task technology and satisfaction with coworkers,

supervision, promotion, and pay? Is this
relationship, if any, moderated by individual
growth need strength?

Since this study examines two samples drawn from two different
fire departments operating in different cultures (Venezuela and U.S.A.)
there is another set of hypotheses related to cross-cultural compari-
sons. It was stated earlier that the two organizations have the same
objectives and operate in the same manner. There is also a significant
transfer of technology to Venezuelan firemen from American fire services,
equipment manufactures and, in less degree, specialized educational
institutions.[5] There is an unknown factor, it is that that attracts
the people to the fire service (Mattarazo et al., 1964; Marks, 1970),
but what we know so far about them is that they come from a variety
of backgrounds (Mattarazo et al, 1964), and this applies to both
countries considered in this study.

Some conditions differ for the two fire departments: The turnover
rate in most fire departments is very low - about five percent, in
the first three to four years of the person's career. The turnover
rate for the rest of the time, people with five or more years in the
fire service is almost non-existent (Marks, 1970). This fact is
somewhat different in the Venezuelan fire service. The turnover rate
is very high, so high that there are always from fifty to two-hundred
job openings at the entry level. From every fifty new recruits that
are incorporated to the active service, about forty of them leave after
18 months on the job. The basic training provided them in the Venezuelan
fire service does not prepare them with the realities of the job and
working conditions. This may be one of the major causes of the high

turnover rate and dissatisfaction with the job (see Wanous, 1975).

The turnover rate gets lower as the length of service increases, but

it is not until the person has been on the job for ten or more years

when he will quit thinking about leaving the fire service.[6]

A second cultural difference is that in Venezuela the public

including government officials, and even some fire chiefs (managers),

do not cooperate in the improvement of the firefighters working condi-

tions in the same way it is done in the U.S. Everybody admires the

firefighter's job, and agrees that the firefighter deserves the best.

This is a worldwide feeling toward the fire service. In the U.S. it

is good to take on a career as a firefighter, it is a fairly well

paid profession, and some other considerations received are very good.

The standard of living of a firefighter in the U.S.A. is a lot higher

than the firefighter's in Venezuela. The average Venezuelan firefighter

comes from very poor stratus of the population, and the profession

is normally considered as a poor's people occupation. In personal

communication with the former Training and Education Head in that

Venezuelan fire service, he expressed the following, "The government

officials with whom he had to maintain close relationships, all love

our profession, but not one of them would like one of us as a neighbor

or have a son to be a firefighter".[7] In the U.S. firefighters have

more pride and admiration (e.g. Hicks, 1980; McCarty, 1975; Coulter,

1979; O'Connor, 1977). It is a generalized belief among the Venezuelan

fire department managers that most of the newcomers do so in order to

satisfy their basic needs and gain some working experience to then

look for another job. They normally succeed in getting another job

and leaving, because almost any job can offer them more favorable

working conditions than those at the fire service.

A third difference is that of the number of hours worked per week in each fire department. The American fire department works 56 hours a week, and its Venezuelan counterpart works 84 hours a week. In Venezuela, nobody seems to be worried about this and people tend to accept this as a normal situation. A fourth difference is the management style in both samples. In the American sample the supervisors at all levels tend to have more formal education in fire service management, public administration, business administration and other related fields. This is not the case in the Venezuelan sample. The supervisors there have reached their positions mainly on the basis of seniority, regardless of education. However, in the last three years a new system for promotions that considers education levels has been introduced, but its effects are yet to be felt. From personal observations in both organization it seems that in the American sample a more participative management style is used, whereas in the Venezuelan sample management is more authoritarian and tends to apply more military type of treatment to subordinates (e.g. Ovalles, 1964). The most common feedback that supervisors get from employees is the "Yes Sir" type. This situation may affect job satisfaction when employees compare management style and perceived technology and sense some level of incongruence between the two (Porter, Lawler and Hackman, 1975; Aldag and Brief, 1979).

At this point of the discussion a research question should be asked:

Research Question 2: Is the perceived task technology lower in the Venezuelan sample than in the American sample, given the same type of job under an authoritarian

management style?

The Venezuelan sample's differences when compared to its American counterpart helps in predicting workers' responses to their jobs. When comparing the two management styles, in the South American fire service the employees may present higher level of powerlessness which decreases satisfaction (e.g. Blauner, 1964; Hackman and Lawler, 1971; Rousseau, 1977, 1978; Hitt, Hromas, and Womack, 1977; Porter, Lawler, and Hackman, 1975). It is very important to point out that the fire fighter's job presents two facts or sub-jobs. The first is time spent in the fire house waiting for an emergency to occur. This "inner" activity has been described as being boring (e.g. repetitive of apparatus and station maintenance, and the fact of being almost isolated with the same small group of individuals for long periods of time). The second aspect is the firefighting and other emergencies which requires the individuals to adjust to challenging and dangerous working conditions in very short periods of time (McCarty, 1975; Marks, 1970). This second sub-job is much more demanding and it even represents a threat to the firefighter's safety.

Within the characteristics of the Venezuelan sample there is a very peculiar way of punishing breaches of discipline. This an open system of punishment, where the immediate supervisor reports any wrong behavior on a written form, which is sent to a higher level supervisor who, somewhat subjectively, establishes the coersive measure to be imposed on the individual for his noncompliance to the rules. This punishment is read before the whole group of peers and supervisors. This may increase dissatisfaction with the job as has been suggested in earlier works (Murphy, 1972; Arvey and Ivoncevich, 1980; Hamner,

1974; Nord, 1969). In the American sample, the firefighters have a more structured and less subjective way of dealing with discipline problems through a grievance procedure set by the Local 1524 of the International Association of Firefighters - I.A.F.F. (1978-1979) in their contract with the city. In Venezuela, the fire service is not allowed unionization because they are considered part of the national defense.

The work shift for both samples is the same - 24 hours on the job. But in the Latin sample, the firefighters have only 24 hours off between shifts, and their American counterparts have 48 hours off between shifts. This may contribute to higher dissatisfaction with the job in the former as suggested by Zalusky (1978) and Edwards (1975). In the promotion aspects the American sample presents a more structured system in which, the firefighters from entrance level up to certain point are regulated in their opportunities for promotions. These are given automatically up to three years of service when the employee becomes eligible for promotion to the next step. From that point on the employee just has to accumulate seniority as a basic requisite for promotion, and he will decide whether or not to pursue further advancement. Thus, the employer has some control over his career (I.A.F.F., 1978-1979). In the Venezuelan case it is not structured, and the number of steps is significantly higher. A large portion of the individual's promotion depends on his "supervisor judgement and recommendation". While a firefighter in America can reach the rank of captain in seven or eight years, the Venezuelan firefighter will have to expend twice as much time (Ovalles, 1964).

An important point with relationship to the promotion system in

the Venezuelan sample, is that of a cultural difference. While in the American fire department promotions and rewards are given when needed and/or earned in the Venezuelan environment the same outcomes are given on fixed dates. The individual that earns a promotion or another reward has to wait until the date in which the organization's anniversary is commemorated or Christmas Day (in some cases), dates in which positive behaviors deserving those outcomes are recognized. This would not only mean the loss of the reinforcement effects of the reward, but it also might represent a motive for increased dissatisfaction (e.g. Leavitt, 1976; Ford, 1969; Hamner, 1974; Marks, 1970; Murphy, 1972; Nord, 1969; Porter, Lawler and Hackman, 1975).

At this point we are able to make our predictions about employees' reactions to their jobs in two different cultural settings. We have to remember that both organizations are doing the same job, with almost the same job procedures, with the differences designated above. Thus, we hypotehsized:

Hypothesis 4: Overall employee satisfaction (all dimensions) will be lower in the Venezuelan fire department than it is in its American counterpart.

In both samples the reward system is not associated with performance (e.g. Porter, Lawler, and Hackman, 1975), and very rarely anyone is dismissed for being a low performer (Marks, 1971), for which reason some have "entered on-the-job retirement" (ford, 1969). But the work itself presents challenge, self fulfillment, the feeling of being useful to others, adventure, etc. Thus, it is further hypothesized:

Hypothesis 5: Satisfaction of employees with work itself will be higher than satisfaction with promotion and satisfaction with

pay, in both samples.

Since we have an organization in which the individual spends most of the time almost isolated with a small group of peers and supervisor (Mark, 1970; McCarty, 1975), and this produces lack of privacy at work, which may be a motive of dissatisfaction (Porter, Lawler, and Hackman, 1975; Sundstrom, Burt and Kamp, 1980), it is hypothesized:

Hypothesis 6:   In both samples, satisfaction with co-workers and with

supervision (both motives of the lack of privacy at

work) will be lower than satisfaction with the work

itself.

Endnotes

1. Source, U.S. Bureau of the Census, Statistical Abstract of the
   United States: 1979, Washington, D.C., 1979.

2. The definition of the fire service general objectives were drawn
   from the International City Managers Association's book
   Municipal Fire Administration, Washington, D.C.: International
   City Managers Association, 1967. The same objectives are found
   though implicitly in Humberto Ovalles, Manual Practico Del Bombero,
   Caracas, Venezuela: Imprenta Municipal del Dtto. Federal, 1964.
   See also, NFPA, Fire Protection Handbook; Boston, Mass.: National
   Fire Protection Association, 1976.

3. This definition is given by Leonard Marks, in "An Exploratory
   Study of Behavioral Characteristics of Certain Selected Municipal
   Firefighters Utilizing the Personal History Index", unpublished
   Ph.D. dissertation, University of Southern California, 1970.

4. Some fire departments work on 24-hour shifts, some on 12-to-14-hour
   shifts, and some on 8-hour shifts. The majority of the fire depart-
   ments work on 24-hour shifts, or 56-hours a week. See, the
   Municipal Year Book: 1980, Washington, D.C.: International City
   Management Association, 1980.

5. The author of this paper was a member of the Venezuelan fire
   department for many years (1963-1977), before coming to the U.S.
   to complete his college work. Additional information has been
   furnished in personal communication with other members of the same
   fire department, who are in U.S.A. studying in fire protection
   and administration programs at different colleges and universities.

6. Ibid.

7. Personal communication with Cap. Angel Freytez, Head of the Division for Training and Education, at the Caracas, Venezuela Fire Department; April, 1980. Captain Freytez is currently in the United States studying Fire Protection Technology at Oklahoma State University.

CHAPTER IV

RESEARCH DESIGN

IDENTIFICATION AND LABELING OF VARIABLES

It was stated in Chapter II that job satisfaction is a very com-
plex variable which receives influences from many other organizational,
cultural, and environmental variables. The present study concentrates
on the relationship of job satisfaction with two other variables -
technology and individual differences, across two different cultures:
Venezuela and U.S.A.

From our theoretical discussion and hypothesized relationships in
Chapters II and III, job satisfaction is identified as the dependent
variable, and task technology as the independent variable. It is
hypothesized that a positive relationship exists between task techno-
logy and job satisfaction with growth need strength (an individual
difference measure), acting as a moderator of this relationship in
both the U.S.A. and Venezuelan samples.

Samples

The samples were drawn from two medium size public service organ-
izations: fire departments. The size was determined by the number of
operation employees - those directly involved in the services rendered
to the public, and by the size of the cities they serve. The reasoning
behind this was that a 500,000 people city in U.S.A. presents similar
work load to its fire department as a 3.5 million city in Venezuela
does. The main reason is the type of construction, in which the
dominant materials in the building industry in Venezuela are bricks,
cement, and concrete, compared to the large amount of wood-frame
construction in U.S.A.

The American fire department, located in central Oklahoma, has 677 people in direct operational activities. Across this sample, the jobs ranged from the entry level to the fire district chief who coordinates the operations of a number of fire companies. From the 562 questionnaires distributed, 502 were returned for a 89.3% response rate. Of these 502 questionnaires, 330 were completed correctly and were used for analysis in all this study. All questionnaires with any blank responses were deleted. The Venezuelan fire department, located in the north-central part of that country, has 520 people in similar activities as the American sample, with similar job range to that of the American fire department. From 400 questionnaires distributed, 249 were returned for a 62.25% response rate. Of these 249 questionnaires, 126 were completed correctly and used for analysis. Again, only those who responsed to all questions were used.

The Questionnaires

The questionnaires consisted of three parts with a cover sheet explaining the purpose of the questionnaire and giving some general instructions. Specific instructions for the completion of the questionnaire precluded each section. Because of the nature of the questions asked in the questionnaire, employees were assured by wording on the cover sheet and by the administration procedure used, of complete response anonymity.

Since questionnaires were to be distributed between two different populations, two versions of the questionnaire were needed. The original version used by Hitt and Cash (1979) was used in the American sample. But a new spanish version had to be used in the Venezuelan

sample, because very few of the employees in this sample could under-stand English. The author of this study translated the original version of the questionnaire into Spanish. Copies of this spanish version and the original English version were given to a group of five people from Venezuela who are fluent in both English and Spanish. Furthermore, two of those people were employees at the fire department considered as the Venezuelan sample. Of the discussions with these five people, we obtained very useful feedback which was utilized to make corrections on the original Spanish version of the questionnaire. By the use of this translating procedure we guaranteed that the Spanish version questions was an accurate interpretation of the English questions. Although some questions were not literally trans-lated.

<center>Instruments</center>

The questionnaire administered to the respondents consisted of three sections. The first section was the instrument designed to measure the task technology. The measure used for this purpose was the Technology Measurement Instrument (TMI), developed by Hitt and Middlemist (1978). The TMI considers two dimensions of a job, time perspectives - includes activities of a short and/or long-run nature, and task complexity which measures job discretion and standardization of the job. The scores of these two scales are averaged to produce a score on task technology (see Appendix A). Hitt and Middlemist found results suggesting their technology measure-ment instrument (TMI) to be valid and highly reliable. The TMI was found to discriminate among subunits with known technology differences. Furthermore, the TMI was found to have a test-retest reliability

coefficient of .786. The task complexity scale was found to have an average coefficient alpha of .698. The other scale, time perspectives, requires no measure of internal consistency, because it has only one item.

The Job Descriptive Index (JDI) was included as second section of the questionnaire to measure the employees job satisfaction. The JDI measures satisfaction with supervision, co-workers, type of work, pay and promotion. It has been used widely in job satisfaction research and found to have good psycometric properties (Smith, Kendall, and Hulin, 1969). At the beginning of each scale in the JDI, there were instructions to the respondent to fill in a "Y" (or "Si" in the Spanish version), "N" (or "No" in the Spanish version), or "?" when undecided, according to what most of the respondent's time on the job was like (see Appendix C for detailed description of JDI). Smith et. al. (1969) found that a response of "?", or undecided, was more indicative of dissatisfaction than satisfaction, so the following weighting system was designed:

TABLE IV-I

Response	Weight
No ("N" or "No") to a negative item	3
Yes ("Y" or "Si") to a positive item	3
Undecided ("?") to any item	1
No to a positive item	0
Yes to a negative item	0

Although, the last section of the questionnaire used the long version of the individual differences instrument (Hackman and Oldham, 1974), for purposes of this study we will use only the second part of it, also known as the "job choice format". This was due to the fact that in more recent findings it was shown to be a more accurate measure of individual's growth need strength (e.g. Aldag and Brief, 1975). The "job choice format" is composed of twelve questions which present the respondent growth-relevant jobs in one side and lower-growth jobs in the other. This scale yields a value between 1 and 5 for each question, these twelve values are averaged to obtain a value for individual's growth need strength (GNS).

Data Analysis

The statistical methods in this study will include: Pearson product-moment correlation analysis to test the relationship between task technology and workers' satisfaction with their jobs and with the other dimensions of satisfaction; moderated regression analysis to test the moderating effects of individual differences on the task technology-job satisfaction relationship; two-tailed T-test to evaluate the contribution of the moderating variable in the regression model, and one-tailed T-test to examine cultural and environmental differences between the samples from the two countries; finally hierarchical cluster analysis will be applied to determine different groups (high, medium, and low) of individual growth need strength (GNS), which is a measure of individual differences.

The objective of the Pearson product-moment correlation analysis is to determine the degree to which variation in one variable is

associated to variation in another. This correlation analysis provides a single number-correlation coefficient which summarizes the strength of relationship between two variables or the proportion of variation in one variable explained by another. Thus, we will use the Pearson product-moment correlation analysis in examining the strength and direction of the relationships between task technology and satisfaction with work, and task technology and each one of the other dimensions of job satisfaction (supervision, co-workers, pay, and promotion). The computer run for this analysis will be the Pearson Correlation Sub-Program of the Statistical Package for the Social Sciences (SPSS, Second Edition, 1975).

Moderated multiple regression analysis will be used in testing the effects of individual differences (growth need strength - GNS) as a moderator of the relationship between task technology and the five dimension of job satisfaction-work, supervision, co-workers, pay, and promotion (Zedeck, 1971). The moderated relationship as indicated by the moderated regression model will tell whether or not GNS has moderating effects the stated relationships. The moderated regression technique examines the interaction and main effects using both the restricted and full regression models, which represents one of its advantages over other techniques (Hitt and Cash, 1979).

A one-tailed T-test will be applied to evaluate the contribution of the moderating variable (individual differences) in the regression model, according to the following formula (Saunders, 1956):

$$t = \sqrt{\frac{D.F. \ (R_M^2 - R_L^2)}{(1 - R_L^2)}}$$

where: R_L^2 is the multiple correlation coefficient for the restricted regression model, and

R_M^2 is the multiple correlation coefficient for the full regression model.

The T-test will indicate whether or not the increase in the multiple correlation coefficients is significant to conclude that a variable is an operating moderator (Saunders, 1956). The one-tailed T-test will be used to examine differences on the five dimensions of job satisfaction between the Venezuelan and the American samples.

If GNS is found to be a significant moderator, cluster analysis will be used to group the data into three groups of high, medium, and low growth need strength (GNS). Hitt and Cash (1979) emphasize that this technique is superior to most previous subgrouping approaches because it guarantees that all subjects within a group are similar and because each group is at a greatest distance possible from all the others on GNS scores. This technique also allows the analysis of the medium GNS group which has been overlooked by some (Aldag and Brief, 1975; Hackman and Lawler, 1971; Wanous, 1974).

CHAPTER V

ANALYSIS OF RESULTS

Methodological Problems

In the process of surveying the Venezuelan firefighters some problems were encountered. A copy of the Spanish version of the questionnaire was mailed to a person within the Venezuelan fire department, who was in charge of the reproduction and administration of the questionnaires. Once the questionnaire reached that fire department it was retyped in order to be reproduced. In this process the satisfaction with co-workers section (18-item scale) was omitted from the questionnaire. There were two items missing from the satisfaction with work. A second set of Spanish questionnaires were reproduced locally and sent to that South American country, in an attempt to re-administer them, but time constraints prevented us from completing this process.

It was decided to adjust the questionnaires received from our American sample, by not including in our analysis neither the 18-item scale omitted in the Venezuelan sample nor the two missing items in the satisfaction with work section of the same questionnaires. By adopting this procedure we hoped to make both samples more comparable. Thus some comparisons between the two samples and some within the Venezuelan sample were not made, but still the results obtained with the rest of the variables were sufficient for testing our hypotheses.

Reliability Scores on Measuring Instruments

All the instruments used in this study had been used before in other organizations and they had proven to be valid and highly reliable (eg. Aldag and Brief, 1975; Hackman and Oldham, 1974; Hitt

TABLE V-1

RELIABILITY SCORES ON MEASURING
INSTRUMENTS

-Coefficient Alpha-

	Samples	
Scales	Venezuela	U.S.A.
Task Complexity Section of TMI	.008	.170
Individual Differences	.483	.642
Satisfaction With Supervision	.899	.832
Satisfaction With Co-Workers	N.A.	.873
Satisfaction With Work	.803	.655[a]
Satisfaction With Pay	.711	.737
Satisfaction With Promotion	.711	.825

a = It was necessary to adjust the work scale in the
American sample by deleting two items out of 18
that were missing in the Venezuelan sample.

and Middlemist, 1978; Smith, Kendall and Hulin, 1969). In spite of this fact it was considered safer to test each scale for internal consistency. So we ran coefficient alpha analysis to test the internal consistency of all multi-item scales included in the questionnaire. Table V-1 illustrates the results of this analysis.

From the alpha values shown in Table V-1 it is concluded that all but one of the scales showed good internal consistency both in the Venezuelan sample and in the American sample. The scale that failed to show internal consistency was the Task Complexity section of the Technology Measurement Index (TMI). It showed a coefficient alpha of .008 for the Venezuelan sample and of .170 for the American sample. This complexity section has six items that measure (a) the amount of personal discretion allowed on the job, (b) the degree of standardization and repetitiveness (routine) on the job, and (c) the degree of task interdependence among jobs in the unit. This task complexity scale's failure to show internal consistency prevented us from using it to develop a score on the technology of the job. Thus the Time Perspectives scale, the second section of the TMI, was used as a surrogate measure of technology. This scale measures the amount of time spent on activities with an immediate impact on departmental achievements versus activities with longer range effects. The Time Perspectives scale has only one item, which does not require measure of internal consistency.

Hypothesis Testing

Our first hypothesis was that there is a positive relationship between task technology and satisfaction with work in both the

TABLE V-2

CORRELATION MATRIX FOR INDEPENDENT, DEPENDENT
AND POTENTIAL MODERATOR VARIABLES

Venezuelan Sample
(n = 126)

	Tech.	GNS	Superv.	Co Worker	Work	Pay	Promot.
Time Perspectives (Task Technology)	----						
GNS	.008	---					
Satisfaction With Supervision	** -.230	-.118	---				
Satisfaction With Co-Workers	N.A.	N.A.	N.A.	---			
Satisfaction With Work	.063	.013	*** .372	N.A.	___		
Satisfaction With Pay	-.085	-.146	*** .376	N.A.	* .194	---	
Satisfaction With Promotion	.088	-.010	.351	N.A.	*** .3687	*** .365	---

*** p < .001

** p < .01

* p < .05

TABLE V-3

CORRELATION MATRIX FOR INDEPENDENT, DEPENDENT
AND POTENTIAL MODERATOR VARIABLES

American Sample
(n = 330)

	Tech.	GNS	Superv.	Co Worker	Work	Pay	Promot.
Time Perspectives (Task Technology)	---						
GNS	-.023	---					
Satisfaction With Supervision	.004	-.090	---				
Satisfaction With Co-Workers	-.001	.041	*** .509	---			
Satisfaction With Work	** -.137	.061	*** .328	*** .456	---		
Satisfaction With Pay	-.042	.075	** .145	** .154	*** .271	---	
Satisfaction With Promotion	-.007	* .117	*** .258	*** .313	*** .287	*** .285	---

*** $p < .001$

** $p < .01$

* $p < .05$

Venezuelan sample and the American sample. Correlation coefficients for independent, dependent and potential moderator variables were computed. These results are shown in Table V-2 for the Venezuelan sample and Table V-3 for the American sample. The correlation coefficient for the Venezuelan sample is .063 (with no statistical significance). The same relationship's coefficient for the American sample is -.137 ($p < .01$). The American sample showed significant correlation between task technology and satisfaction with work. The Venezuelan sample failed to show any correlation between the variables. These results do not support the first hypothesis. Furthermore, the relationship between task technology and satisfaction with work in the American sample showed to be in the wrong direction than as predicted.

Hypothesis number two stated that the hypothesized positive relationship between task technology and satisfaction with work would be moderated by individual differences. The moderator variable was measured by the individual's growth need strength (GNS) scores. Despite the fact that the findings gave no support to the first hypothesis, moderated regression analysis was run for both samples, and T-test applied to the multiple regression coefficients for the restricted and full regression models. These results are illustrated in Tables V-4 and V-5, for the Venezuelan sample and the American sample, respectively. The results shown in these two tables indicated that individual differences is not a moderator of the task technology-work satisfaction relationship in neither sample. The differences between the squared multiple correlation coefficients (R^2) for the restricted model and for the full model in both samples were not

TABLE V-4

MODERATED REGRESSION ANALYSIS WITH INDIVIDUAL
DIFFERENCES AS A MODERATOR

Venezuelan Sample
(n = 126)

Dependent Variable	Regression Model	R^2
Satisfaction With Supervision	Restricted (Time Perspectives + Ind. Diff.)	R^2 = .0666 t = .115
	Full (Time Persp. + Ind. Diff. + T.P. x I.D.)	R^2 = .0667
Satisfaction With Co-Workers	Restricted	R^2 = N.A. t = N.A.
	Full	R^2 = N.A.
Satisfaction With Work	Restricted	R^2 = .0041 t = 1.315
	Full	R^2 = .0181
Satisfaction With Pay	Restricted	R^2 = .0284 t = .013
	Full	R^2 = .0285
Satisfaction With Promotion	Restricted	R^2 = .0179 t = .969
	Full	R^2 = .0254

** Significant at or beyond the 1 percent level.

 * Significant at or beyond the 5 percent level.

TABLE V-5

MODERATED REGRESSION ANALYSIS WITH INDIVIDUAL
DIFFERENCES AS A MODERATOR

American Sample
(n = 330)

Dependent Variable	Regression Model	R^2
Satisfaction With Supervision	Restricted (Time Perspectives = Ind. Diff.)	$R^2 = .0666$
		$t = .115$
	Full (Time Persp. + Ind. Diff. + T.P. x I.D.)	$R^2 = .0667$
Satisfaction With Co-Workers	Restricted	$R^2 = .0017$
		$t = .677$
	Full	$R2 = .0031$
Satisfaction With Work	Restricted	$R^2 = .0221$
		$t = .317$
	Full	$R^2 = .0224$
Satisfaction With Pay	Restricted	$R^2 = .0073$
		$t = .181$
	Full	$R^2 = .0074$
Satisfaction With Promotion	Restricted	$R2 = .0136$
		$t = .794$
	Full	$R^2 = .0155$

** Significant at or beyond the 1 percent level.

* Significant at or beyond the 5 percent level.

statistically significant. Thus we may conclude that individual differences did not operate as a moderator of the mentioned relationship.

The third hypothesis stated that there is a positive relationship between perceived task technology and satisfaction with work in each of the three GNS groups. However, the testing of this hypothesis was subject to the results of hypothesis number two. Since our findings showed that GNS does not moderate the task technology-work satisfaction relationship in neither sample, (see Tables V-4 and V-5) the testing of hypothesis three was not necessary.

The results shown in Tables V-2 and V-3 answered the first part of research question number one. The question asked whether there was a relationship between task technology and the other dimensions of job satisfaction (supervision, co-workers, pay, and promotion). In the American sample the correlation coefficients for task technology and the mentioned dimensions of job satisafction are (refer to Table V-3): for supervision .004 (N.S.); for co-workers -.001 (N.S.); for pay -.042 (N.S.); and for promotion -.007 (N.S.). In the Venezuelan samples (Table V-2) the same correlation coefficients are: for supervision -.230 ($p < .01$); for co-workers N.A.; for pay -.085 (N.S.); and for promotion .088 (N.S.). These findings showed that, although not significant in most of the cases, some relationships are in different directions, which could be the effect of cultural and environmental differences between the two countries. There is not a relationship between task technology and satisfaction with supervision, co-workers, pay, and promotion in both samples, with the exception of the Venezuelan sample that showed a significant negative relationship

TABLE V-6

T-TEST ANALYSIS TO DETERMINE DIFFERENCES
BETWEEN SAMPLES

U.S.A.   n = 330   Venezuela   n = 126

Variables	Samples	Mean	S.D.	T-Values
Time	U.S.A.	2.299	1.991	.26
Perspectives	Venezuela	2.250	1.419	
Individual	U.S.A.	3.008	.499	*** -7.31
Differences	Venezuela	3.379	.444	
Satisfaction with Supervision	U.S.A.	45.918	9.281	*** 15.98
	Venezuela	27.095	15.257	
Satisfaction with Work	U.S.A.	34.461	7.041	*** 4.77
	Venezuela	30.516	9.799	
Satisfaction with Pay	U.S.A.	9.242	5.849	*** 6.57
	Venezuela	5.341	5.152	
Satisfaction with Promotion	U.S.A.	15,748	7.713	*** 6.96
	Venezuela	10,373	6,396	
Total Satisfaction	U.S.A.	105,390	19.850	*** 13.91
	Venezuela	73,325	26.862	

Note: Satisfaction with co-workers is not included in this
       analysis because the whole 18-item scale was missing
       in the Venezuelan sample. And satisfaction with work
       had two items deleted in the American sample, because
       they were left out in the American sample.

*** p < .001

** p < .01

* p < .05

between task technology and satisfaction with supervision.

The second part of research question one, which referred to whether the relationship between task technology and each satisfaction with supervision, co-workers, pay, and promotion, if any, was moderated by individual growth need strength. The results that answer to this part are illustrated in Tables V-4 and V-5. Again the results showed that individual differences had no moderating effects on the relationships described above.

Table V-6 illustrates the results of a T-test analysis to determine differences between samples. These results provide an answer to research question two, in which we wanted to know whether there was a difference in perceived task technology between the Venezuelan and the American samples. Using time perspectives as the measure of task technology, the results showed that there is not difference in perceived task technology (T-value .26, N.S.) between samples.

The results shown in Table V-6 also illustrate the testing of hypothesis four, which stated that overall satisfaction would be higher in the American fire department than it would be in the Venezuelan counterpart. This hypothesis was tested twice. First the scores for all satisfaction dimensions, but satisfaction with co-workers, were added together for both American and Venezuelan samples. The means for these two totals were analyzed and the T-test value for the difference between means was found to be statistically significant (T-value 13.91, $p < .001$). The other test was performed by analyzing the differences between sample means for each dimension of satisfaction, with the exception of satisfaction with co-workers. Again the results

in Table V-6 give strong support to the hypothesized relationship, with the T-values of 15.98, 4.77, 6.57, and 6.96, for satisfaction with supervision, work, pay, and promotion (all significant at the .001 level). Both tests gave strong support to hypothesis four.

Hypothesis five stated that satisfaction with work itself would be higher than satisfaction with promotion and satisfaction with pay for both the American and the Venezuelan samples. Tables V-7 and V-8 illustrate of T-test analysis applied to both samples to examine the differences between means of the mentioned variables in both countries. In the Venezuelan sample satisfaction with work and satisfaction with pay were significantly different (T-value 19.67, $p < .001$), and in the right direction. In the same sample satisfaction with work and satisfaction with promotion were significantly different (T-value 11.4, $p < .001$), and in the predicted direction. In the American sample we have similar results. Satisfaction with work and satisfaction with pay were significantly different (T-value 29.74, $p < .001$). The same was true for satisfaction with work and satisfaction with promotion (T-value 8.46, $p < .001$). Both of these relationships resulted to be in the predicted direction. Thus, hypothesis five received strong support.

We obtained similar results for hypothesis six. It was stated that satisfaction with work would be higher than satisfaction with co-workers and satisfaction with supervision. Tables V-7 and V-8 illustrate the results of the T-test analysis used to examine differences between the means between these variables. One of the two relationships was statistically significant in the Venezuelan sample: satisfaction with work was higher than with supervision (T-value = 5.30,

TABLE V-7

T-TEST ANALYSIS TO DETERMINE DIFFERENCES BETWEEN
SATISFACTION WITH WORK AND OTHER
DIMENSIONS OF SATISFACTION

U.S.A. Sample
(n = 330)

Satisfaction With:	Mean	Stand. Deviation	T-Values
Work	2.154	.440	***
Supervision	2.551	.516	-12.77
Work	2.154	.440	***
Co-Workers	2.490	.592	-11.06
Work	2.154	.440	***
Pay	1.027	.650	29.74
Work	2.154	.440	***
Promotion	1.745	.857	8.46

*** $p < .001$

** $p < .01$

* $p < .05$

TABLE V-8

T-TEST ANALYSIS TO DETERMINE DIFFERENCES BETWEEN
SATISFACTION WITH WORK AND OTHER
DIMENSIONS OF SATISFACTION

Venezuelan Sample
(n = 126)

Satisfaction With:	Mean	Stand. Deviation	T-Values
Work	1.907	.612	***
Supervision	1.505	.848	5.30
Work	1.907	.612	N.A.
Co-Workers	N.A.	N.A.	
Work	1.907	.612	***
Pay	.593	.572	19.67
Work	1.907	.612	***
Promotion	1.153	.711	11.41

*** $p < .001$

** $p < .01$

* $p < .05$

p < .001), but the other relationship was not tested due to the reasons given earlier. In the American sample both relationships were statistically significant: satisfaction with work was significantly different than satisfaction with supervision (T-value -12.77, p < .001); and satisfaction with work was significantly different than satisfaction with co-workers (T-value -11.06, p < .001). But these two relationships were in the wrong direction. Thus hypothesis six was partially supported only in the Venezuelan sample.

Additional Tests

Since we did not find support for our first and second hypotheses, so that variations in our dependent variables were not linked to variations in the independent variable, and that the moderator variable had not effects on this relationship, then we ran factor analysis for both samples. We did not find a single factor that explained variations among variables, providing support for the lack of response bias in either sample.

In our T-test analysis to determine differences between samples, we included a comparison of individual differences variable between the American and the Venezuelan samples. The result of this analysis is illustrated in Table V-6. We felt that there was a need for this, although no hypothesis was stated on this particular aspect, due to the results we were obtaining for other relationships, such as the negative relationship between task technology and satisfaction with supervision in the Venezuelan sample. The T-test analysis indicates that the difference between the individual differences variables between the two samples is statistically significant (T-value -7.31,

$p < .001$), but the scores are higher in the Veneaulean sample than in the American. This results are somewhat different than expected, according to our discussions in Chapters III and IV.

CHAPTER VI

DISCUSSION AND CONCLUSIONS

Introduction

The purpose of this study was based on earlier research findings on the moderating effexts of individual differences, as measured by the individuals' growth need strength (GNS) scores on the relationship between task technology and job satisfaction (Hitt and Cash, 1979), and extended to the determination of cultural differences between fire service employees in two cultures: Venezuela and U.S.A.

It was stated that it was important to follow the methodology used by Hitt and Cash (1979) mainly because they probably are the first ones in attempting empirical work to test more thoroughly the moderating effects of individual differences on the relationship between task technology and job satisfaction. It was also stated that it was important to conduct this study in two different cultures because there have been a significant transfer of technology from U.S.A. to Venezuela, which meets the criteria set by Roberts (1970) and Kraut (1975) as a worthwhile purpose of cross-cultural research. We also felt that this was important to cross-culturally study employees' reactions to their jobs in two similar organizations because there are too many lessons to be learned from it. Such lessons might be of high interest to both Venezuelan and American scholars and practitioners.

The Instruments

In Chapter V we reported the results of the reliability scores on all of these measuring instrument scales (see Table V-1). All but one showed to be internally consistent. The scale that failed to show

internal consistency was the complexity section of the TMI (Hitt and
Middlemist, 1978). This six-item scale had been successfully used
in earlier reserach (e.g. Hitt and Cash, 1979). One particular and
interesting fact is that the complexity scale showed lack of internal
consistency in both the Venezuelan and the American samples. We
said earlier that there has been a great deal of technology transfer
from U.S.A. to Venezuela, and that we observed many similarities in
technical and operational aspects of these organizations. We would
have expected significantly higher reliability scores in this scale
for the American sample because it has more formally defined jobs
than its Venezuelan counterpart, but these results showed that indivi-
duals within these organizations perceive the complexity of their jobs
in similar ways.

The fact that might have influenced the most in such a low scores
in the complexity scale is that the firefighter's job is complex
with multiple level tasks and has two separate dimensions. First
there are a number of routine boring activities performed in the fire-
house, while waiting for emergencies to occur, and the second activity
is the emergency itself, in which the firefighter is required to
activate all his mental and physical abilities in very short periods
of time (McCarty, 1975; Marks, 1970). When the same person in answer-
ing the six items of the complexity scale he might have been thinking
alternatively in these two contradictory aspects of his job. The
routinized and boring part, and the highly active, dangerous and
challenging part of it. To give an example; one of the questions in
the complexity scale refers to the degree in which the jobs assigned
to employees are independent to each other; if the firefighter is in

charge of shining some piece of equipment, an independent job, but in a fire situation the team work is the most important aspect (Spector, 1979). Many times the firefighter's life depends on the effectiveness of his team, and these conditions hold true to both samples.

Task Technology - Job Satisfaction

The relationship between task technology and job satisfaction has been largely examined. The literature indicates that technology presents the most persuasive effect on organizational behavior (Blauner, 1964; Hitt, 1976; Mahoney and Frost, 1974; Peterson, 1975; Rousseau, 1977, 1978). Many have found task technology and job satisfaction to be related (Blauner, 1964; Brief and Aldag, 1975; Hackman and Lawler, 1971; Hitt and Cash, 1979; Hitt, Hromas, and Womack, 1977; Porter, Hackman and Lawler, 1975; Rousseau, 1977, 1978; Walker and Guest, 1952; Woodward, 1965). Hitt and Cash (1979) found a positive relationship between task technology and job satisfaction, supporting earlier research findings (Brief and Aldag, 1975; Hackman and Lawler, 1971; Hitt, Hromas and Womack, 1978; Rousseau 1977, 1978).

The results reported in Chapter V of this study do not support the mentioned relationship between task technology and job satisfaction. We did not find any relationship between satisfaction with work and technology for the Venezuelan sample. The results showed a significant but inverse relationship between these two variables in the American sample. There is one reason that many explain the negative relationship between task technology and job satisfaction found in the American sample. This is the lower overall score in growth need strength that

the American firefighters had compared to their Venezuelan counter-parts, which indicates that as complexity of the tasks increases job satisfaction decreases.

These results are considered to be supportive to the similarities that exist between the two fire service organizations from different cultures. The firefighters' reactions to their jobs seem to be similar, despite the cultural and environmental differences that exist between Venezuela and U.S.A., and regardless of the individuals' growth need strength. It seems that the two dimensions of the firefighter's job might have again affected this relationship. It may be possible that the two "sub-jobs" within this unique occupation may be offsetting their effects on satisfaction with work to each other. For instance the level of satisfaction reached by fighting fires and other emergency activities might be offset by the dissatisfaction produced by the boring and routinized activities within the fire station.

The relationship between task technology and each of the other dimensions of job satisfaction (supervision, co-workers, pay, and promotion) was found to be non-existent, with the exception of the relationship between task technology and satisfaction with supervision in the Venezuelan sample, which was significant and negative. We explained in Chapter III that the management style at the Venezuelan fire service is more authoritarian and tend to use more military type of treatment to subordinates (Ovalles, 1964), than its American counterparts. The results suggest that there is not a proper fit between the two dimensions which may be affecting not only satisfaction but also may have some effects on unit effectiveness (e.g. Leavitt, 1976; Porter, Lawler, and Hackman, 1975). The other results gave

support to Hitt and Gash's (1979) work in which they did not find
that task technology was not related to satisfaction with co-workers,
pay, and promotion.

The Moderating Variable

Job satisfaction has been recognized as being much more complex
in its dimensional relations and it may be the result of a complex of
interaction variables (Vroom, 1966). Many have dealt with many inter-
acting variables as indicated in Chapter II. Some variables, others
than structure, size, and technology have been introduced in the
research of job satisfaction. For example Hulin and Blood (1968)
suggested that satisfaction is dependent of the workers' background;
Turner and Lawrence (1965) like Hulin and Blood (1968) deal with
individual differences at the sub-cultural or sociological level;
and Hackman and Lawler (1971) like some others suggested that indivi-
dual's growth need strength (GNS) may have moderating effects on the
task technology-job satisfaction relationship.

Some have found only weak support for the moderating effects of
GNS (e.g. Hitt and Cash, 1979; Rebinowitz, Hall, and Goddale, 1977).
Following the research design used by Hitt and Cash (1979) this study
failed to find moderating effects of individual differences, as
measured by the individual's growth need strength (GNS), on the task
technology-job satisfaction relation. Thus the results give no
support to earlier findings by Hitt and Cash (1979), Hitt, Hromas
and Womack (1978), and Rousseau (1977, 1978).

Cross-Cultural Findings

We have already discussed some results that give support to our theoretical discussion in which it was established that both fire service organizations are very similar in the objectives they pursue, working conditions, technology used, and others. The results obtained when measuring complexity of the job, the relationship between task technology and satisfaction with work, the effects of individual differences as a moderator of the task technology-job satisfaction relationship give support to the fact that there are similarities, and that these similarities elicit the same reactions from the employees in each of the countries. There is one more common factor between the two organization. It is the how employees perceived the technology employer, as measured by the tine perspectives scale of the TMI (Hitt and Middlemist, 1978). Our findings did not show any statistical differences in the perceived task technology by Venezuelan and American firefighters.

Some cultural and environmental differences did show up in the research findings. The effect of different managerial styles was already discussed and supported by the negative relationship between supervision and technology in the Venezuelan sample. In this South American country the authoritarian management style is not only present in military and paramilitary organizations (police, fire), but it is rather common in civilian organizations as well. The findings of this study suggest that as technology grows in complexity employess tend to reject their authoritarian supervisors.

We predicted that total satisfaction (all dimensions) would be

higher in the American sample than in the Venezuelan sample. We ellaborated extensively when presenting cultural and environmental conditions in which the two organizations operate. The differences in satisfaction between smaples were also examined by comparing each dimension of satisfaction separately. Although all the differences were statistically significant and in the predicted direction, satisfaction with work showed the least value. Given all the cultural and environmental conditions, which may negatively affect the Venezuelan firefighter's with his job, the results do not strongly support this. The reason for this may be explained by the fact that in the Venezuelan sample there is a job rotation practice taking place almost at any time, and without any fixed scheduled or previous planning. The rotation may be reographically-from one fire station to another; or it may occur horizontally-from one fire company to a rescue squad or to any other unit; or it may be from one assignment to another within the same unit. Similar practice has been recommended by Onieal (1977) as a part of a job enrichment program available to fire departments in U.S.A.

These facts may be related to the findings in other part of our study. We stated that in both samples satisfaction with work would be higher than satisfaction with supervisors and co-workers. These relationships held partially true for the Venezeulan sample (satisfaction with co-workers was not tested due to the lack of data). In the American sample the relationships showed statistical significance, but were negatively related which is contrary to the direction predicted. It is our belief that, in the American sample, satisfaction with work may be decreased by the fact that the firefighters stay for large

periods of time maybe years. On the other hand, satisfaction with supervisors and co-workers may be increased by the fact that firefighters being almost isolated in the same fire station with the same small group of peers and supervisors for such a long period of time (Marks, 1970), may induce them to get along better than their Venezuelan counterparts.

We stated that working conditions at the fire department in either case reduce markedly the mental and physical privacy of its members (Marks, 1970), and that this lack of privacy may negatively affect job satisfaction (Sundstrom, Burt, and Kamp, 1980). This effect may not have any influence in the firefighters' life. This is so, probably, because employees and supervisors share many situations - pleasant and unpleasant, in their jobs that may contribute to offset the lack of privacy in which they live.

Also it was stated that satisfaction with work would be higher than satisfaction with pay and satisfaction with promotion. The research findings of this study give support to these relationships. An important point here is that the difference between satisfaction with work and satisfaction with pay was more significant in the American sample than in the Venezuelan. This may be due to differences in standards of living in both countries. Firefighters in U.S.A. belong to a middle class, and they have to expend more to keep up with the requirements of the social class, the reason for which they tend to "moonlight" when off duty. In the Venezuelan case, firefighters are mostly located in a lower social class, with lesser requirements of expenditure. Another factor that may help explain this is that firefighters in U.S.A. may be more aware than the Venezuelan of the level of risk of their profession, which is reinforced by the

number of deaths and injuries that occur every year. The percent of
fatalities and injuries within Venezuelan firefighters is much lower.

The differences between satisfaction with work and satisfaction
with promotion was more significant in the Venezuelan sample than in
the American. This fact is justified by the way in which both organ-
izations manage their promotion systems. We stated that while in
the American sample promotions and rewards are given when needed and/or
earned, in the Venezuelan sample the same outcomes are given on fixed
dates. This may be a factor of dissatisfaction with promotion (e.g.
Ford, 1969; Porter, Lawler and Hackman, 1975).

Another interesting fact is that, as we mentioned earlier, it
was found individual differences to have a higher significant score
in the Venezuelan sample than in the American sample. It was con-
cluded that there may be two reasons that explain this significant
difference between samples. It may be either that the American fire
department is attracting people with low growth need strength, or the
fire department selection procedure is picking up the persons with
this condition. This seems not to be present in the Venezuelan sample.

Implication for Future Research

This research study has failed to find relationships between
certain organizational and personal variables. Relationships that
have been largely proven to exist in past research were not found either
in the American or the Venezuelan sample in this research. But this
fact does not deny the validity of earlier reserach findings, what
it does is to call to the attention of students of organization an
important fact that is the uniqueness or the organizations examined

in this work: the fire service.

The reasoning here is that some instruments used in this study may not work or respond in the same way across all organizations, or that the researcher administering them may need to take a different approach in doing so. For instance, had we asked the respondents to think on a given situation (attending an emergency or being at the fire house) we might have been able to improve internal consistency, because the working conditions would have been more clearly defined before the respondent completing the questionnaire. We have to recognize that this study dealt with organizations with a two dimensional technology, which is rather an unusual situation, and which suggests future research may focus on the "sub-tasks" effects on satisfaction with work. This will need further research.

The findings of this research study have contributed to the knowledge that given the same technology, procedures and working conditions we may find similar reactions from employees, regardless of the culture in which the organization operates. This study has examined employee's reactions to his job not only at the individual level, but also at the cultural level as well. It is our belief that the big step forward in cross-cultural research is that we identified very similar organizational settings which allowed us to control for extraneous variances due to the comparison of dissimilar organizations as has been the case in many earlier comparative management research. Another important contribution is that we found that in the Venezuelan culture the goodness of fit that should exist between technology and managerial style seems to hold true, as it has been empirically proven in U.S.A. This provides suggestive evidence that at least some

organization theory concepts may apply to all organizations regardless of culture. More research must be performed in order to empirically examine this notion in other organizations.

Many who express their willingness to perform cross-cultural studies have often complained of the lack of resources or of the high costs that these studies imply. We advocate the use of a valuable but frequently overlooked resource available to almost anyone. Today, it is hard to find an university or college in the U.S. that does not have a considerable number of international students pursuing a degree in U.S.A. This is a resource that offers the researches among other things accurate translations of instruments into foreign languages; good initial contacts with foreign organizations to be examined; facilitate the follow-up of the study; and an accurate source of updated information about cultural and environmental characteristics of their countries.

Implications for Practitioners

The findings of this research study have contributed in the identification of some cirtical points in the fire service that could be of great benefits to fire department members. When doing the literature review, we found that empirical works on human behavior within the fire service is almost non-existent, and those studies we found related to personnel were within the field of personal protection and safety, how economically to use personal resources, and other technical aspects of the job. Fire service managers should encourage more study organizational theory and behavior within their organizations, because they are faced with a rather high number of deaths and injuries every

year, and because there seems to be a growing sense of non-conformity within firefighters as evidenced by increasing numbers of work stopages, strikes, etc.

As we described earlier, the Venezuelan fire service is unknowingly using a job variation program, in which they are rotating personnel indifferent forms. From one station to another, from one unit to another, and from one slot to another within a given unit. We advocate the use of this system as a way of giving some variety to the fire-fighter's job. The minimum period of time for a firefighter to master a given job will vary, but it can be safely said that any firefighter would have to spend at least six months on a job before being considered for rotation. There may be some effects on unit performance, but it can be considered as the same effect as when a new recruit is assigned to an engine company or any other unit. This rotation may help increase satisafction with work, and when done on a programmed basis may have no negative effects on other dimensions of job satisfaction.

There is also some indication that the managerial style that fits better in the fire service seems to be the democrative and participative type of supervision. For some cultures like the Venezuelan, it is somewhat harder to make people understand this point, althought the results obtained reflect that the firefighters are not satisfied with the supervision they receive. It is at least an indication that employees would respond better under a more participative style of supervision. They feel that the authoritarian supervisory style does not fit the type of the fire service technology. Efforts should be made to overcome some cultural and environmental barriers and to introduce a change in the style of supervision, in order to adapt

this to the realities of the organization.

In introducing change into an organization, there are a number of methods and tools available to the practitioner. He must choose the best one according to the current resource base. But what is really important for managers in the fire service is that modern equipment and tools, advanced communication systems, and up-to-date procedures are not enough to effectively operate the service. It is also necessary to have a good understanding of the individuals that operate the equipment, tools, and follow procedures.

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APPENDICES

APPENDIX A

ENGLISH VERSION OF THE

QUESTIONNAIRE

DEMOGRAPHIC DATA

This section consists of personal characteristics about yourself which will be used to stratify the results in a more meaningful manner.

1. Please circle the appropriate category below for your age, length of service with your organization, and the years in your present job.

	Age		Length of Service with your organization		Years in Present Job
1.	Under 25	1.	Less than 1 year	1.	Less than 1 year
2.	25-30	2.	1-2	2.	1-2
3.	31-35	3.	3-5	3.	3-5
4.	36-40	4.	6-10	4.	6-10
5.	41-45	5.	11-15	5.	11-15
6.	46-50	6.	16-20	6.	16-20
7.	51-55	7.	21-25	7.	21-25
8.	56-60	8.	26-30	8.	26-30
9.	Over 60	9.	Over 30	9.	Over 30

2. Is your job (circle one)

   1. Supervisory?   2. Nonsupervisory?

3. What is your sex?

   1. Male   2. Female

4. Please circle the highest level of formal education completed.

   1. Did not graduate from high school
   2. High school graduate or equivalent
   3. Completed 1-4 years of college work
   4. College graduate (Bachelors)
   5. Completed some graduate work
   6. Completed a Masters degree
   7. Completed a Doctors degree
   8. Other (please specify) _____

CONTEXTUAL FACTORS

There are a number of aspects concerning the nature of the tasks which people perform in organizations which contribute to the manner in which those tasks are completed. This section contains several sets of questions or statements which we would like you to respond to in describing the nature of the task which your are responsible for performing. Instructions precede each set. Please respond to each question as you feel best describes your job.

TIME PERSPECTIVES

Instructions. Persons working on different activities are concerned to different degrees with future and current problems. This part asks how your time is divided between activities which will have an immediate effect on your department's results and those which are of a longer range nature. Please indicate below what percent of your time is devoted to working on matters which will affect results within each of the periods indicated. (For example: If most of your time is devoted to activities which show immediate results in your department, put a high percentage (80-90%) beside the 1 day to one week period.) Your answers should total 100%.

6. 1. 1 day to 1 week ...._____ %
    2. 1 week to 1 month ...._____ %
    3. 1 month to 6 months ...._____ %
    4. 6 months to 1 year ...._____ %
    5. 1 year to 2 years ...._____ %
    6. 2 years or more ...._____ %

                                    __100__ % total

TASK COMPLEXITY

Task compexity refers to the degree to which your job is comprehensible and understandable by one person. Please answer each question by circling the degree to which you agree or disagree with each of the following statements, except for statement 12, which asks you to place a check mark beside certain items.

7. Complete personal discretion is given to me in accomplishing my task.

Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
1	2	3	4	5	6

8. For doing most of the things required by my task, there are standardized procedures which must be followed.

Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
1	2	3	4	5	6

9. The jobs (tasks) assigned to employees in my department are completely independent of each other.

Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
1	2	3	4	5	6

10. Most of the things I do in my job are routine and repetitive.

Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
1	2	3	4	5	6

11. The overall complexity of my department's objectives, assignments or tasks is quite high.

Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
1	2	3	4	5	6

12. Please place a check mark beside the various aspects of your job in which you are allowed personal discretion, i. e., your supervisor does not give you specific instructions.

Scheduling of work completion _____
Speed of work _____
Selection of specific assignments _____
Making decisions on work methods _____
Making decisions on work objectives _____
Other: _____ _____
I am not allowed discretion _____

INDIVIDUAL DIFFERENCES (PART I)

Listed below are a number of characteristics which could be present in any job. People differ about how much they would like to have each one present in their own jobs. We are interested in learning how much you personally would like to have each one present in your job.

Using the scale below, please indicate the degree to which you would like to have each characteristic present in your job.

4	5	6	7	8	9	10

Would like having this only a moderate amount (or less)	Would like having this very much	Would like having this extremely much

___1. High respect and fair treatment from my supervisor.
___2. Stimulating and challenging work.
___3. Chances to exercise independent thought and action in my job.
___4. Great job security.
___5. Very friendly co-workers.

___ 6. Opportunities to learn new things from my work.

___ 7. High salary and good fringe benfits.

___ 8. Opportunities to be creative and imaginative in my work.

___ 9. Quick promotions.

___10. Opportunities for personal growth and development in my job.

___11. A sense of worthwhile accomplishment in my work.

INDIVIDUAL DIFFERENCES (PART II)

People differ in the kinds of jobs they would most like to hold.
The questions in this section give you a chance to say just what
it is about a job that is most important to you.

> For each question, two different kinds of jobs are
> breifly described. You are to indicate which of
> the jobs you personally would prefer--if you had
> to make a choice between them.

In answering each question, assume that everything else about the
jobs is the same. Pay attention only to the characteristics
actually listed.

EXAMPLE QUESTION

JOB A

A job requiring you to
expose yourself to con-
siderable physical danger.

1------------(2)------------3-------------4-------------5

Strongly   Slightly   Neutral   Slightly   Strongly
prefer A   prefer A   prefer B   prefer B

JOB B

A job located 200 miles
from your home and
family.

> If you would slightly prefer risking physical danger
> to working far from your home, you circle number 2,
> as has been done in the example.

JOB A

1. A job where the pay
   is very good.

JOB B

A job where there is
considerable opportunity
to be creative and
innovative.

1-------------2-------------3-------------4-------------5

Strongly   Slightly   Neutral   Slightly   Strongly
prefer A   prefer A   prefer B   prefer B

2. A job where you are often
   required to make impor-
   tant decisions.

A job with many pleasant
people to work with.

1-------------2-------------3-------------4-------------5

Strongly   Slightly   Neutral   Slightly   Strongly
prefer A   prefer A   prefer B   prefer B

	JOB A			JOB B	

3. A job in which greater responsibility is given to those who do the best work.

A job in which greater responsibility is given to loyal employees who have the most seniority.

1------------2------------3------------4------------5

Strongly prefer A	Slightly prefer A	Neutral	Slightly prefer B	Strongly prefer B

4. A job in an organization which is in financial trouble and might have to close down within the year.

A job in which you are not allowed to have any say whatever in how your work is scheduled, or in the procedures to be used in carrying it out.

1------------2------------3------------4------------5

Strongly prefer A	Slightly prefer A	Neutral	Slightly prefer B	Strongly prefer B

5. A very routine job.

A job where your co-workers are not very friendly.

1------------2------------3------------4------------5

Strongly prefer A	Slightly prefer A	Neutral	Slightly prefer B	Strongly prefer B

6. A job with a supervisor who is often very critical of you and your work in front of other people.

A job which prevents you from using a number of skills that you worked hard to develop.

1------------2------------3------------4------------5

Strongly prefer A	Slightly prefer A	Neutral	Slightly prefer B	Strongly prefer B

7. A job with a supervisor who respects you and treats you fairly.

A job which provides constant opportunities for you to learn new and interesting things.

1------------2------------3------------4------------5

Strongly prefer A	Slightly prefer A	Neutral	Slightly prefer B	Strongly prefer B

8. A job where there is a real chance you could be laid off.

A job with very little chance to do challenging work.

1------------2------------3------------4------------5

Strongly prefer A	Slightly prefer A	Neutral	Slightly prefer B	Strongly prefer B

9. A job in which there is a real chance for you to develop new skills and advance in the organization.

A job which provides lots of vacation time and an excellent fringe benefit package.

1------------2------------3------------4------------5

Strongly prefer A	Slightly prefer A	Neutral	Slightly prefer B	Strongly prefer B

	JOB A			JOB B	

10. A job with little freedom and independence to do your work in the way you think best.

A job where the working conditions are poor.

1------------2------------3------------4------------5

Strongly prefer A	Slightly prefer A	Neutral	Slightly prefer B	Strongly prefer B

11. A job with very satisfying team-work.

A job which allows you to use yours skills and abilities to the fullest extent.

1------------2------------3------------4------------5

Strongly prefer A	Slightly prefer A	Neutral	Slightly prefer B	Strongly prefer B

12. A job which offers little or no challenge.

A job which requires you to be completely isolated from co-workers.

1------------2------------3------------4------------5

Strongly prefer A	Slightly prefer A	Neutral	Slightly prefer B	Strongly prefer B

SUPERVISION ON PRESENT JOB

Think of the kind of supervision that you get on your job. How well does each of the following words describe this supervision? In the blank beside each word below, put:

Y if it describes the supervision you get on your job
N if it does NOT describe it
? if you cannot decide

___Asks my advice   ___Up-to-date   ___Knows job well
___Hard to please   ___Doesn't supervise enough ___Quick tempered
___Impolite   ___Bad   ___Intelligent
___Praises good work   ___Tells me where I stand   ___Leaves me on my own
___Tactful   ___Annoying   ___Around when needed
___Influential   ___Stubborn   ___Lazy

PEOPLE ON YOUR PRESENT JOB

Think of the majority of the people that you work with now or the people you meet in connection with your work. How well does each of the following words describe these people? In the blank beside each work below, put:

Y if it describes the people you work with
N if it does NOT describe them
? if you cannot decide

___Stimulating   ___Fast   ___Unpleasant
___Boring   ___Intelligent   ___No privacy
___Ambitious   ___Easy to make enemies   ___Active
___Slow   ___Talk too much   ___Narrow interests
___Stupid   ___Smart   ___Loyal
___Responsible   ___Lazy   ___Hard to meet

WORK ON PRESENT JOB

Think of your present work. What is it like most of the time? In the blank beside each word given below, put:

Y for "YES" if it describes your work
N for "NO" if it does NOT describe it
? if you cannot decide

___Fascinating   ___Respected   ___Challenging
___Routine   ___Hot   ___On your feet

___Satisfying	___Pleasant	___Frustrating
___Boring	___Useful	___Simple
___Good	___Tiresome	___Endless
___Creative	___Healthful	___Gives sense of accomplishment

PRESENT PAY

Think of the pay you get now. How well does each of the following words describe your present pay? In the blank beside each word, put:

 _Y_ if it describes your pay
 _N_ if it does NOT describe it
 _?_ if you cannot decide

___Income adequate for normal expences	___Income provides luxuries	___Highly paid
___Satisfactory benfits	___Bad	___Underpaid
___Barely live on income	___Less than I deserve	___Insecure

OPPORTUNITIES FOR PROMOTIONS

Think of the opportunities for promotion that you have now. How well does each of the following words describe these? In the blank beside each word, put:

 _Y_ for "YES" if it describes your opportunities for promotion
 _N_ for "NO" if it does NOT describe them
 _?_ if you cannot decide

___Good opportunities for promotion	___Opportunity some-what limited	___Fairly good chance for promotion
___Promotion on ability	___Unfair promotion policy	___Dead-end job
___Infrequent promotion	___Good chance for promotion	___Regular promotions

THANK YOU FOR YOUR COOPERATION.

APPENDIX B

SPANISH VERSION OF THE

QUESTIONNAIRE

DATOS DEMOGRAFICOS

Esta sección consiste de datos acerca de sus características personales, los cuales son de gran utilidad para la tabulación de los resultados.

1. Cual es el título de su cargo actual?_____

2. Por favor. Marque con un círculo la categoria adecuada dentro de cada gru

Edad	Tiempo de Servicio a la Institución	Años en su Cargo Actual
1. Menos de 25 años	1. Menos de 1 año	1. Menos de 1 año
2. 25-30	2. 1-2	2. 1-2
3. 31-35	3. 3-5	3. 3-5
4. 36-40	4. 6-10	4. 6-10
5. 41-45	5. 11-15	5. 11-15
6. 46-50	6. 16-20	6. 16-20
7. 51-55	7. 21-25	7. 21-25
8. 56-60	8. 26-30	8. 26-30
9. Mas de 60	9. Mas de 30	9. Mas de 30

3. Su trabajo implica supervisión de personas (Tiene Ud personas bajo su mando)?

    1. Si   2. No

4. Cual es su sexo?

    1. Masculino   2. Femenino

5. Por favor. Marque con un círculo el más alto nivel de educación formal, al-canzado por Ud.

    1. No culminé los estudios secundarios(bachillerato u otro)
    2. Poseo diploma de bachiller o equivalente
    3. Poseo algunos años de estudios universitarios
    4. Graduado universitario (pregrado)
    5. Poseo algunos estudios de post-grado
    6. Completé estudios de maestría
    7. Poseo título de doctorado
    8. Otro (especifique)_____

    La sección que continúa contiene varios grupos de preguntas o afirmacione que le ayudarán a describir la naturaleza de la(s) tarea(s) por los cuales Ud. es responsable. Cada grupo de preguntas está precedido por instrucciones. Por favor lea las instrucciones, y luego conteste las preguntas en la manera que Ud. considere que esta describiendo su trabajo más adecuadamente .

Las tareas de su departamento tienen resultados que se reflejan a corto y largo plazos. Udted emplea diferentes 'porcentajes' de su tiempo en estas tareas. Indique con valores de 1 al 100, el tiempo que Ud. le dedica a tareas cuyos resultados se reflejan en cada uno de los períodos de tiempo indicados (Por ejemplo: Usted le dedica un alto porcentaje de su tiempo a tareas cuyos resultados se hacen evidente de un día a una semana, escriba 80% o 90% en ese renglón). Su tiempo total debe sumar 100%, vaya asignandole valores hasta completar 100%.

6.   1. De un día a 1 semana...............____%
       2. De una semana a 1 mes.............____%
       3. De 1 mes a 6 meses................____%
       4. De 6 meses a 1 año................____%
       5. De 1 año a 2 años.................____%
       6. 2 años o mas......................____%

total   100 %

....

COMPLEJIDAD DE LAS TAREAS

Esta parte corresponde al grado en que su trabajo es comprendido y entendido por una persona. Por favor, conteste cada una de las preguntas marcando con un círculo el número (del 1 al 5) correspondiente al grado en el cual Usted está en desacuerdo o de acuerdo con las siguientes afirmaciones. La afirmación No 12 le pide marcar o chequear al lado de ciertos renglones.

7. Completa libertad personal me ha sido dada para ejecutar mi trabajo.

Fuertemente en desacuerdo	en desacuerdo	Levemente en desacuerdo	Levemente de acuerdo	de acuerdo	Fuertemente de acuerdo
1	2	3	4	5	6

8. Para hacer la mayor parte de las cosas requeridas en mi trabajo existen normas establecidas, las cuales deben ser cumplidas.

Fuertemente en desacuerdo	en desacuerdo	Levemente en desacuerdo	Levemente de acuerdo	de acuerdo	Fuertemente de acuerdo
1	2	3	4	5	6

9. Las tareas asignadas a los empleados de mi departamento son completamente independientes unas de otras.

Fuertemente en desacuerdo	en desacuerdo	Levemente en desacuerdo	Levemente de acuerdo	de acuerdo	Fuertemente de acuerdo
1	2	3	4	5	6

10. La mayoría de las tareas que hago en mi trabajo son rutinarias y re-
petitivas.

Fuertemente en desacuerdo	en desacuerdo	Levemente en desacuerdo	Levemente de acuerdo	de acuerdo	Fuertemente de acuerdo
1	2	3	4	5	6

11. La complejidad total de los objetivos, asignaciones y tareas de mi de-
partamento es bastante alta.

Fuertemente en desacuerdo	en desacuerdo	Levemente en desacuerdo	Levemente de acuerdo	de acuerdo	Fuertemente de acuerdo
1	2	3	4	5	6

12. Por favor. Marque con 'x' aquellos aspectos de su trabajo en donde le
es permitida libertad personal(Es decir: aspectos en los cuales su
supervisor no da instrucciones específicas y Ud tiene la libertad de
tomar decisiones).

Programando el tiempo para completar el trabajo.....____
Velocidad en la ejecución del trabajo...............:____
Selección de asignaciones especificas...............:____
Tomando decisiones en métodos de trabajo............:____
Tomando decisiones en objetivos de trabajo..........:____
Otras(especifique) _____
No me está permitida libertad alguna................____

. . . .

DIFERENCIAS INDIVIDUALES (PARTE I)

Abajo aparecen ciertas cualidades las cuales podrian estar presente
en cualquier trabajo. La gente difiere en relación a cuanto le gustaría
le gustaría tener cada una de esas cualidades, presentes en sus propios
trabajos. Estamos interesados en conocer cuanto le gustaría personalmen-
te a Usted tener esas cualidades en su trabajo.

Usando valores del 4 al 10 indique el deseo porque su trabajo tenga
cada una de las cualidades mencionadas. Si una cualidad es muy poco de su
agrado déle el valor más bajo (4); si por el contrario Ud desearía extre-
madamente tener una cualidad dele el valor más alto (10). Cualquier núme-
ro intermedio indicará un mayor o menor agrado de que la cualidad este
presente en su trabajo.

___ 1. Alto grado de respeto y consideración por parte de mi supervisor
___ 2. Trabajo estimulante y retador (no rutinario y fastidioso)
___ 3. Oportunidad de emplear independencia de acción y pensamiento en
mi trabajo
___ 4. Gran sentido de seguridad en el trabajo
___ 5. Compañeros bien amistosos
___ 6. Oportunidad para aprender nuevas cosas en mi trabajo
___ 7. Alto salario(sueldo) y buenas prestaciones sociales
___ 8. Oportunidades para ser creativo e imaginativo en mi trabajo
___ 9. Promociones (ascensos) rápidas
___10. Oportunidades de desarrollo personal en el trabajo
___11. Sentido de que el cumplimiento de mi trabajo es de valor

. . . .

DIFERENCIAS INDIVIDUALES (PARTE II)

La gente difiere en los tipos de trabajo que a ellos les gustaría te-
ner. Las preguntas de esta sección le dan a Usted la oportunidad de decir
lo que es importante acerca de un trabajo, para Ud.

Para cada pregunta, dos trabajos son brevemente descritos. Ud
debe indicar cual de ellos Ud prefiere personalmente, piense
que Ud debe elegir uno de los dos trabajos descritos.

EJEMPLO

TRABAJO A   TRABAJO B

El trabajo requiere que   El trabajo esta localizado
Ud se exponga a considerable   a 300 kms de su hogar y
peligro físico   familia

1----------------(2)-------------3--------------------4-------------5
Fuertemente   Ligeramente   Neutral   Ligeramente   Fuertemente
prefiero A   prefiero A   prefiero B   prefiero B

Si Ud prefiriera, ligeramente, exponerse a peligro físico, en lugar
de trabajar léjos de la familia, entonces Ud marcaría el No 2 con un
círculo, como aparece indicado en el ejemplo.

TRABAJO A   TRABAJO B

1. Un trabajo donde el sueldo es   Un trabajo donde existen considera
    muy bueno.   bles oportunidades para ser creati
                                         vo e innovador.
    1--------------2------------3--------------4------------5
    Fuertemente   Ligeramente Neutral Ligeramente Fuertemente
    prefiero A   prefiero A   prefiero B   prefiero B

2. Un trabajo donde es necesario que   Un trabajo donde hay muchas perso-
    Ud tome importante decisiones.   nas agradables.
    1--------------2------------3--------------4------------5
    Fuertemente   Ligeramente Neutral Ligeramente Fuertemente
    prefiero A   prefiero A   prefiero B   prefiero B

3. Un trabajo en donde los que traba-   Un trabajo donde las responsabili-
    jan mejor les es dada mayor res-   dad le es dada a los que son más
    ponsabilidad.   leales y tienen más antiguedad.
    1--------------2------------3--------------4------------5
    Fuertemente   Ligeramente Neutral Ligeramente Fuertemente
    prefiero A   prefiero A   prefiero B   prefiero B

4. Trabajo en una organización la   Un trabajo donde no esta permitido
    cual es en problemas financieros   decir nada en cuanto a planificaci
    y puede cerrar en un año.   del mismo, o de los procedimientos
    1--------------2------------3--------------4------------5
    Fuertemente   Ligeramente Neutral Ligeramente Fuertemente
    prefiero A   prefiero A   prefiero B   prefiero B

TRABAJO A	TRABAJO B

5. Un trabajo muy rutinario.   Un trabajo donde sus compañeros no son muy amistosos.

```
1-------------2------------3----------------4--------------5
Fuertemente  Ligeramente  Neutral    Ligeramente   Fuertemente
prefiero A   prefiero A              prefiero B    prefiero B
```

6. Un trabajo donde su supervisor lo critica a Ud frecuentemente frente a otras personas.   Un trabajo que no le permite a Ud aplicar conocimientos y habilidades que Ud aprendió con sacrificio.

```
1-------------2------------3----------------4--------------5
Fuertemente  Ligeramente  Neutral    Ligeramente   Fuertemente
prefiero A   prefiero A              prefiero B    prefiero B
```

7. Un trabajo con un supervisor que le respeta y le trata imparcialmente.   Un trabajo que le brinda a Ud oportunidades constantes de aprender cosas nuevas e interesantes.

```
1-------------2------------3----------------4--------------5
Fuertemente  Ligeramente  Neutral    Ligeramente   Fuertemente
prefiero A   prefiero A              prefiero B    prefiero B
```

8. Un trabajo donde existe gran chance de que Ud pueda ser despedido.   Un trabajo en donde existe poco chance de encontrar actividades retadoras

```
1-------------2------------3----------------4--------------5
Fuertemente  Ligeramente  Neutral    Ligeramente   Fuertemente
prefiero A   prefiero A              prefiero B    prefiero B
```

9. Un trabajo donde existen chances para que Ud desarrolle nuevas habilidades y avance dentro de la organización.   Un trabajo que ofrece gran cantidad de vacaciones y prestaciones sociales excelentes.

```
1-------------2------------3----------------4--------------5
Fuertemente  Ligeramente  Neutral    Ligeramente   Fuertemente
prefiero A   prefiero A              prefiero B    prefiero B
```

10. Un trabajo con poca libertad para hacer las cosas de la manera que Ud piensa es mejor.   Un trabajo donde las condiciones son pobres(condiciones de trabajo).

```
1-------------2------------3----------------4--------------5
Fuertemente  Ligeramente  Neutral    Ligeramente   Fuertemente
prefiero A   prefiero A              prefiero B    prefiero B
```

11. Un trabajo donde los grupos de trabajo son bastante satisfactorios.   Un trabajo que le permite usar sus habilidades extensamente.

```
1-------------2------------3----------------4--------------5
Fuertemente  Ligeramente  Neutral    Ligeramente   Fuertemente
prefiero A   prefiero A              prefiero B    prefiero B
```

	TRABAJO A	TRABAJO B

12. Un trabajo que ofrece poco o   Un trabajo que le obliga a estar co
    no reto.   tamente aislado de sus compañeros.

1---------------2-----------3-------------4-------------5

Fuertemente	Ligeramente	Neutral	Ligeramente	Fuertemente
prefiero A	prefiero A		prefiero B	prefiero B

. . . .

SUPERVISION EN SU ACTUAL TRABAJO

Piense acerca del tipo de supervisión que Ud recibe en su trabajo;
decir, el tipo de conducta y estilo que su Superior o Jefe inmediato us
con Ud en el trabajo. De qué manera cada una de las siguientes expresio
refleja ese tipo de supervisión que Ud recibe? En el espacio en blanco
lado de cada expresión, ponga:

si Si la expresión refleja la conducta y estilo de su
    supervisor

no Cuando no la describe o refleja

?   Si Ud está indeciso

___ Me pide consejos   ___ Moderno, al día   ___ Conoce el trabaj

___ Difícil de complacer   ___ No supervisa lo   ___ De mal genio
                                suficiente

___ Descortés, grosero   ___ Malo   ___ Inteligente

___ Me alaba cuando tra-   ___ Define mi posición   ___ Me permite actua
    bajo bien   con relación a mi   solo(a)
                                rendimiento

___ Discreto   ___ Fastidioso, molesto   ___ Está cerca cuand
                                                          le necesita

___ Influyente   ___ Terco, porfiado   ___ Flojo, perezoso

OTRAS PERSONAS EN SU TRABAJO ACTUAL

Piense acerca de la mayoría de las personas que trabajan con Ud. o en las personas con las cuales Ud se relaciona por razones de trabajo. De qué manera cada una de las siguientes expresiones describen a esas personas? En el espacio en blanco al lado de cada una de esas expresiones, ponga:

si Si la expresión refleja al tipo de personas que trabajan con Ud

no Cuando no lo refleja

? Si Ud está indeciso

__ Estimulantes	__ Rápidas	__ Desagradables
__ Fastidiosas	__ Inteligentes	__ No permiten privac dad
__ Ambiciosos	__ Fáciles haciendo enemigos	__ Activos
__ Lentos	__ Hablan mucho	__ Tienen intereses limitados
__ Estúpidos	__ Talentosos	__ Leales
__ Responsables	__ Flojos	__ Difíciles para rel cionarse

SU TRABAJO ACTUAL

Piense acerca de su trabajo actual. Cómo es su trabajo la mayor parte del tiempo? En el espacio en blanco al lado de cada expresion, ponga:

si Si la expresión describe su trabajo

no si no lo describe

? si Ud no puede decidir

__ Fascinante	__ Respetable	__ Desafiante, retadc
__ Rutinario	__ Violento, intolerable	__ Actívo
__ Satisfaciente	__ Agradable	__ Frustrante
__ Fastidioso	__ Util	__ Simple
__ Bueno	__ Tedioso, pesado	__ Interminable, cont
__ Creador	__ Saludable	__ Me da la sensasión realización

REMUNERACION ACTUAL

Piense acerca de la remuneración que Ud recibe. Las expresiones siguientes describen su remuneración bien? En cada espacio en blanco, ponga:

si_ si la expresión describe su remuneración

no_ si no la describe

_?_ si Ud no puede decidir

__ Ingreso adecuado para los gastos normales

__ Beneficios adicionales satisfactorios

__ Escasamente vivo con ingresos

__ Ingreso alcanza para lujos

__ Es mala

__ Es menos de lo que merezco

__ Altamente(bien) remunerado

__ Mal pagado

__ Es insegura

OPORTUNIDADES PARA PROMOCIONES

Piense en las oportunidades que Ud tiene para ascenso o promoción,ahora. Cuán bien las siguientes expresiones describen esas oportunidades? En el espacio en blanco al lado de cada expresión, ponga:

si_ si la expresión representa esas oportunidades

no_ si no la representa

_?_ si Ud no puede decidir

__ Buenas oportunidades para promoción

__ Promoción basada en habilidades

__ Promoción es infrecuente -no regular.

__ Oportunidades son algo limitadas

__ Politica de promoción injusta

__ Buen chance para promoción

__ Bastante buen chance para promoción

__ Estoy en el máximo de mi categoría, no promoción posible.

__ Promociones regulares

==

****** MUCHAS GRACIAS POR SU VALIOSA COOPERACION ******

APPENDIX C

DETAILED DESCRIPTION OF THE

JOB DESCRIPTION INDEX

(Excerpt from Robinson, 1969, pp. 105-107)

The Job Description Index

(Smith et al., 1965)

Variable
The JDI attempts to measure job satisfaction in the areas of pay, promotion, supervision, type of work and the people on the job.

Description
The instrument consists of 72 items—18 in each of work, supervision, and people subscales and nine each in pay and promotions. Each grouping consists of a list of adjectives or descriptive phrases. The respondent is asked to write "yes" next to each item which describes his pay (promotion, etc.) and "no" for each item which does not. A question "?" response is reserved for items on which the respondent cannot decide. "Y" answers are scored 3, "N" answers 0, and "?" answers as 1 point.

Sample
Various samples have been used in constructing and validating this scale. The interested reader may acquire further information through the references listed below. Responses of 952 people in seven different organizations were used in developing the JDI.

Reliability/
Homogeneity
Corrected split-half internal consistency coefficients are reported to exceed .80 for each of the scales. Some evidence for stability over time is reported by Hulin (1966).

Validity
Hulin (1966) reports a correlation of −.27 between satisfaction and turnover (over a 12 month period) for female clerical employees. Other studies involving convergent and discriminant validity have been carried out by the Cornell group (see reference).

Location
Locke, Edwin A., Patricia C. Smith, and Charles L. Hulin. Cornell Studies of Job Satisfaction: V. Scale Characteristics of the Job Descriptive Index. Mimeo, Cornell University, circa 1965.

Results and
Comments
In addition to the extensive high quality research done on the JDI by the Cornell group there are several factors intrinsic to the scale which recommend its use. The verbal level of the items is quite low and does not require the respondent to understand complicated or vague abstractions.

While the JDI is neither a projective nor a direction of perception type instrument, it does approach "job satisfaction" somewhat indirectly. The instrument asks the respondent to describe his job rather than his feelings about it. It seems quite evident from the numerous studies with the JDI that one's perception of his job is

highly colored by his satisfaction with it. The JDI is
a face valid instrument which can be easily administered
and scored in a short time.

There are a few characteristics of the JDI which do not
add to its value, although they are not serious defects.
The first of these is the problem of social desirability.
While there is some relation between JDI scores and so-
cial desirability, the correlation is not high.

The potential user, however, should keep in mind the pos-
sibility that scores may be affected in some way by this
factor. The possibility of "faking good" also exists re-
garding the JDI and potential users would be wise to take
all necessary measures to assure employees that their re-
sponses will remain anonymous.

The five subscales do not appear to be statistically in-
dependent, judging from the magnitude of the correlations
at the bottom of this page. This may mean that JDI is
tapping a general job satisfaction syndrome. The theo-
retical implications, however, suggest a general satis-
faction factor rather than specific areas of satisfaction.
It will be noted that only the "work" items (and perhaps
the "people" items) deal with intrinsic job features.
A more balanced set of intrinsic and extrinsic items ap-
pears in the Dunnette et al. study. With the impressive
background of research and the valuable scale character-
istics which the instrument possesses, it is quite likely
to expect that the JDI will become a widely used and
valuable instrument. Professor Smith currently teaches
at Bowling Green University (in Ohio) and should be con-
tacted for those interested in fuller scoring instructions
for the instrument.

The reader may be interested in the following sample of the
voluminous correlational data for each set of items which
indicate the quality of the instrument:

	Work	Supervision	People	Pay	Promotion
Median item intercorrelation	.25	.29	.45	.29	.30
Median item validity	.44	.40	.52	.50	.35
Split half correlation (Uncorr.)	.73	.67	.75	.77	.78
Correlation with alternative method	.75	.72	.64	.78	.57
Work	X	.40	.53	.46	.43
Supervision		X	.30	.10	.20
People			X	.55	.37
Pay				X	.36

Job Description Index

Items in Final Version of JDI

Each of the five scales was presented on a separate page.

The instructions for each scale asked the subject to put "Y" beside an item if the item described the particular aspect of his job (e.g., work, pay, supervision, people, and promotions); "N" if the item did not describe the aspect; or "?" if he could not decide.

The response shown beside each item is the one scored in the "satisfied" direction for each scale.

Work	Supervision	People
Y Fascinating	Y Asks my advice	Y Stimulating
N Routine	N Hard to please	N Boring
Y Satisfying	N Impolite	N Slow
N Boring	Y Praises good work	Y Ambitious
Y Good	Y Tactful	N Stupid
Y Creative	Y Influential	Y Responsible
Y Respected	Y Up-to-date	Y Fast
N Hot	N Doesn't supervise enough	Y Intelligent
Y Pleasant	N Quick-tempered	N Easy to make enemies
Y Useful	Y Tells me where I stand	N Talk too much
N Tiresome	N Annoying	Y Smart
Y Healthful	N Stubborn	N Lazy
Y Challenging	Y Knows job well	N Unpleasant
N On your feet	N Bad	N No privacy
N Frustrating	Y Intelligent	Y Active
N Simple	Y Leaves me on my own	N Narrow interests
N Endless	Y Around when needed	Y Loyal
Y Gives sense	N Lazy	N Hard to meet
of accomp-		
lishment		

Pay	Promotions
Y Income adequate for normal expenses	Y Good opportunity for advancement
Y Satisfactory profit sharing	N Opportunity somewhat limited
N Barely live on income	Y Promotion on ability
N Bad	N Dead-end job
Y Income provides luxuries	Y Good chance for promotion
N Insecure	N Unfair promotion policy
N Less than I deserve	N Infrequent promotions
Y Highly paid	Y Regular promotions
N Underpaid	Y Fairly good chance for promotion

References: Patricia Smith et al. Cornell Studies of Job Satisfaction: I, II, III, IV, V, VI. Mimeo, Cornell University, circa 1965.

Charles L. Hulin, "Job Satisfaction and Turnover in Female Clerical Population," Journal of Applied Psychology, Vol. 50 (1966), 280-285.

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        February 1965-March 1968; Administrative Manager, Arte y
        Madera, C.A., Caracas, May 1968-March 1969; Independent
        consultant, March 1969-May 1970; Comptroller Division
        Assistant Manager, Venezuelan International Airways,
        Caracas, May 1970-May 1974; Planning and Development
        Division Manager, Caracas, Venezuela Fire Department,
        June 1974-June 1977; Graduate Teaching Assistant, O.S.U.,
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