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JOB PERFORMANCE AND SATISFACTION AS A FUNCTION OF
JOB CHARACTERISTICS AND ORGANIZATIONAL CLIMATE
ACROSS EIGHT TANZANIAN ORGANIZATIONS

By

Birger Baklien

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

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Department of Administration and Higher Education

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ABSTRACT

JOB PERFORMANCE AND SATISFACTION AS A FUNCTION OF JOB CHARACTERISTICS AND ORGANIZATIONAL CLIMATE ACROSS EIGHT TANZANIAN ORGANIZATIONS

By

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This study was broadly concerned with the question of how to increase job performance and satisfaction in a sample of organizations in Tanzania as a prototype third-world country. Research in the West has shown that job characteristics and organizational climate may to a certain extent improve job performance and satisfaction. One major goal of this study was to identify some correlates of job satisfaction and performance in Tanzania. Members of two types of work organizations, higher education institutions and production firms, were studied to test generality of findings across Tanzanian organizations. Another major goal was to check causal directions among the measured variables.

A structured questionnaire was administered to a sample in each of eight organizations: three higher education institutions and five production firms. The questionnaire included indices of organizational climate, job characteristics, and job satisfaction, as well as a scale of job performance. The items were mostly taken from Western research literature, but items were also designed that had particular relevance to the Tanzanian work culture.

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In the defined population the proportion of blue-collar workers was lower than in the total work force of the eight organizations because of the level of English that was required to answer the survey questionnaire. This sampling problem may have led to some restriction of range of the responses, and probably conservatively lower correlations.

Systematic deterministic sampling was used, and the major methods of data analysis were Pearson correlations, two-way ANOVA, and path analysis.

The following zero-order correlations were obtained:

Job characteristics/organizational climate:	.36 (p < .001)
Job satisfaction/job performance:	.14 (p < .01)
Job characteristics/job satisfaction:	.74 (p < .001)
Job characteristics/job performance:	.09 (n.s.)
Organizational climate/job satisfaction:	.45 (p < .001)
Organizational climate/job performance:	.02 (n.s.)
Educational level/job performance:	.10 (p < .05)
Educational level/job satisfaction:	.16 (p < .05)
Position level/job performance:	.24 (p < .001)
Position level/job satisfaction:	.18 (p < .001)

The relationship between satisfaction and performance was controlled for each of the variables job characteristics, organizational climate, educational level, and position level. It was found that the satisfaction/performance relationship did not increase with increasing amounts of job characteristics and organizational climate. Furthermore, it was found that the satisfaction/performance relationship did increase with increasing educational level and position level.

Factor analysis resulted in five underlying factors of job satisfaction. Employees of Tanzanian higher education institutions had a tendency to experience higher job satisfaction than did employees in production firms. A series of t-tests showed that satisfaction with "private attitudes that make the employee like his job" and with "physical and social conditions" was higher in educational institutions ($p < .001$ and $p < .003$, respectively). Satisfaction with "opportunity to be someone important," "organizational characteristics affecting the employee's feelings about his job," and "feelings toward immediate superior" showed no difference in the two types of organizations. These results may be partially explained by job characteristics that are a reflection of higher intrinsic job rewards associated with teaching/training work, research, or administration than with production tasks. Position level may also partially explain this difference.

There were no interaction effects of job characteristics and organizational climate on job satisfaction or job performance.

Path analysis was used to test the strength of causal directions in the pattern of variables. It showed that the higher the job characteristics and the organizational climate, the higher the level of employee satisfaction. However, only a small causal effect of job characteristics on performance was found.

The researcher used two ways of operationalizing job satisfaction: (1) the "is now" approach and (2) the discrepancy approach. The former asked how much there is now of a satisfaction facet, whereas in the latter approach "discrepancy" meant the difference between how much there "should be" and how much there "is now" of a satisfaction facet.

A very weak negative, causal, and reciprocal relationship was found between job satisfaction and performance when satisfaction was operationalized in accordance with the "is now" approach. On the other hand, a weak to moderate positive, causal, and reciprocal relationship was found between job satisfaction and performance when satisfaction was operationalized in accordance with the discrepancy theory. Job satisfaction caused performance, and performance caused satisfaction. The strongest causal direction was from job performance to job satisfaction, rather than from satisfaction to performance.

For Tanzanian organizations to improve job performance and satisfaction, this researcher suggests that some attention be paid to improving job characteristics and organizational climate, mainly because of their positive relationship with job satisfaction, and, somewhat less, because of their at least weak positive relationship with job performance.

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CHAPTER I

RATIONALE OF THE STUDY

Background, Impetus, and Purpose of the Study

During the past 15 to 20 years, researchers in the fields of psychology, education, organizational behavior, and management have been engaged in investigating the areas of job satisfaction and job performance. The interrelationship between these two variables, as well as their relationship to job characteristics, has been the subject of continued research among scholars and practitioners. For the past 10 years, substantial effort has been put into investigating another variable, organizational climate, and its relationship to other aspects of the work situation, such as job characteristics, job satisfaction, and job performance. In the present study, the relationships among job characteristics, organizational climate, job satisfaction, and performance in Tanzanian organizations were investigated. Of particular interest was to identify correlates of job satisfaction and job performance as well as correlates of the relationship between satisfaction and performance. Another purpose of the study was to find the strongest causal direction between job satisfaction and performance.

No published research related to the relationships among job characteristics, organizational climate, job satisfaction, and job performance in Tanzanian organizations was found. Tanzanian managers complain about low job performance and ask how to enhance work

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motivation and job satisfaction. Work motivation as an important leadership function and development of job designs that are conducive to a higher level of job satisfaction and job performance are regarded as main problems in Tanzanian organizations today.

In Tanzanian policy documents and in public speeches by leaders in government and in the political party, Chama Cha Mapinduzi, hard work is emphasized as necessary in order to develop the country quickly toward the national goal of self-reliance. The question of how to improve the physical and psychological work atmosphere, job satisfaction, and job performance has gained momentum during the last decade, both practically and politically. In addition, Tanzanian scholars, as well as expatriate scholars working in the country, have been urging more investigation into this problem area.

This background points toward the importance of conducting research in the area of job satisfaction/job performance and probable determinants of these output variables. The time has come to look into job structure itself and the job environment, in order to be able to enhance work motivation, job satisfaction, and job performance in Tanzanian organizations. The present study was designed first and foremost as a project to investigate the relationships among four key variables.

Job characteristics and organizational climate were regarded as independent variables. They contain several extrinsic and intrinsic reward factors that may be related to job satisfaction and job performance. The important determinants of work behavior that are inherent in the national ideology of Tanzania are interwoven with material

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incentives. Therefore, it may be difficult to separate pure ideological incentives from material rewards resulting from ideological commitment. Even though political education and indoctrination may be able to cultivate pure ideological incentives as driving forces toward work, material rewards may follow as a result of hard work because of high commitment to a political ideology. In a speech during the tenth anniversary of the Arusha Declaration, President Nyerere emphasized intrinsic rewards related to ideological commitment:

We cannot expect early rewards from our work in the way of increased consumption--either of public or personal goods. We must be prepared to find our rewards for effort in increased national self-reliance and the maintenance of our independence of action. There is a time for planting and a time for harvesting. I am afraid for us it is still a time for planting (Daily News, February 8, 1977).

In setting forth his prospects for the country, President Nyerere stated that the Tanzanian people must increase their discipline, their efficiency, and their self-reliance. This means hard work. Within this frame of reference, the problem of how to increase job performance as well as job satisfaction becomes extremely important. The political ideology and leadership philosophy in Tanzania have already made some progress toward increasing and promoting creative effort at work. This statement holds true for parastatals, public corporations, and governmental agencies. Investigation of the determinants of work behavior inherent in the national ideology and leadership philosophy is beyond the scope of this study, but such determinants are discussed in Chapter II.

The impact of this research for Tanzania is hoped to be a dual one:

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1. For Tanzanian scholars, to relate the findings of this study to their teaching of this area of organizational behavior in the context of a developing African country and to use the findings in further research and investigation of job satisfaction and performance.

2. For Tanzanian practitioners (managers and supervisors), to use the results of this study to be in a better position to take adequate action and initiative in organizational changes leading to higher job satisfaction and job performance.

Measurement of the major variables was based on indices that were developed, one for job characteristics (20 items), one for organizational climate (89 items), and one for job satisfaction (25 items). Job performance was measured by three items only. Job satisfaction was operationalized in two ways: in accordance with the discrepancy theory of satisfaction (Locke, 1969), and in accordance with the "is now" approach (Porter, 1961). Organizational climate was rated by two groups of people: employees and organization and management experts in an external consulting firm. Job performance was also rated by two groups of people: employees and immediate supervisors.

Several demographic variables were considered to be important control variables as well as potential correlates of job satisfaction and performance. Seven demographic variables were measured: age, sex, marital status, educational level, position level, number of years worked in the organization, and number of dependents the employee had to support with money.

Two types of organizations were selected as respondent organizations: higher education organizations and production firms. These

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were regarded as essential types of organizations in the Tanzanian culture. A sample of eight Tanzanian organizations, located in three different geographical areas of the country, was selected: three higher education institutions and five production organizations. The organizations, the population of respondents, and the sample of respondents are described further in Chapter III.

Research Hypotheses

The first research problem was to identify, through factor analysis, underlying factors (subvariables) of organizational climate, job characteristics, and job satisfaction. These underlying factors of each latent trait are to a great extent statistically independent of each other (orthogonal rotation of the factor matrix) and will be used in testing the stated hypotheses.

The major hypotheses tested in this study are as follows:

- H1a: There is a positive relationship between employee-perceived organizational climate and climate ratings by an external consulting firm.
- H1b: There is a larger interorganizational than intraorganizational climate difference.
- H2: There is a strong positive relationship between job satisfaction operationalized in accordance with the discrepancy theory and job satisfaction operationalized in accordance with the "is now" approach.
- H3a: There is a low but positive relationship between self-ratings and immediate-supervisor ratings of job performance.
- H3b: Employees rate their performance higher than their immediate supervisor does.
- H3c: There is a stronger positive relationship between self-ratings and immediate-supervisor ratings of job performance across higher educational institutions than across production firms.

- H3d: There is a stronger relationship between self-ratings and immediate-supervisor ratings for higher educational and position levels than for lower levels.
- H4: Positive relationships exist among job characteristics, organizational climate, job satisfaction, and job performance.
- H5: There is a stronger relationship between job satisfaction and performance across higher educational institutions than across production firms.
- H6: Employees of an organization agree more on perceptions of organizational climate than on perceptions of job satisfaction.
- H7: The level of job satisfaction is higher across higher education institutions than across production firms.
- H8: There is a positive relationship between job satisfaction and the variables: age, educational level, position level, and number of years worked in the organization.
- H9: There is a positive relationship between job performance and educational and position level.
- H10: Among the demographic correlates of job satisfaction and performance, there is a stronger relationship between job satisfaction and performance for higher amounts than for lower amounts of these correlates.
- H11: There is a stronger relationship between job satisfaction and performance for higher amounts of positive job characteristics and organizational climate than for lower amounts.
- H12: There is an interaction effect as well as a main effect of educational and position level on job satisfaction.
- H13: There is an interaction effect as well as a main effect of job characteristics and organizational climate on job satisfaction.
- H14: There is an interaction effect as well as a main effect of job characteristics and organizational climate on job performance.
- H15: The causal direction job satisfaction → job performance is stronger than the causal direction job performance → job satisfaction.

Hypotheses 1a through 3b, and partially Hypotheses 3c and 3d, are related to measurement problems, such as different operationalizations of a construct (construct validity) or the consistency between different rater groups in rating the same construct (convergent validity). Therefore, this set of hypotheses shows coherence in relation to measurement problems. Hypotheses 4 through 15 deal with the general problem complex: relationships among the four major variables, correlates of the endogenous variables job satisfaction and performance, correlates of the satisfaction/performance relationship, comparison of satisfaction levels between the two types of organizations, interaction effects of exogenous variables on the two endogenous variables, and causal direction between the endogenous variables. To some degree, these hypotheses show coherence in relation to the broader research problem, stated in the title of this study.

The rationale behind Hypothesis 1a is that climate researchers are becoming increasingly concerned with construct validation of employee-perceived climate. For example, Pritchard and Karasick (1973) used agreement among external organization experts as a criterion against which to compare the more subjective employee perceptions of organizational climate. The authors suggested ratings by both external consultants and the organization members (the employees) themselves.

Hypothesis 1b is a natural derivation of climate definitions, particularly that of Forehand and Gilmer (1964), who stated that organizational climate is a set of characteristics that distinguish the organization from other organizations, that are relatively enduring over time, and that influence employee behaviors. Therefore, the

difference in climate perceptions between employees within each organization is hypothesized to be smaller than climate differences between organizations.

The rationale behind Hypothesis 2 is evident because some satisfaction researchers have operationalized job satisfaction in accordance with the discrepancy theory of job satisfaction, and some have operationalized it in accordance with the "is now" approach. Different operationalizations of job satisfaction are discussed in Chapter II, and the two operationalizations used in the present Tanzanian research are described in Chapter III. In this study, it was hypothesized (Hypothesis 2) that a strong positive relationship exists between the two operationalizations of job satisfaction. This is in agreement with similar research by Wanous and Lawler (1972).

Research on job performance has shown different results for self-ratings and supervisor ratings of this variable. To investigate this relationship further, four hypotheses, 3a through 3d, were tested. In accordance with the findings of Lawler (1968), a low but positive relationship was hypothesized to exist between self-ratings and immediate supervisor ratings of job performance (Hypotheses 3a). It was also of interest to investigate whether Tanzanian employees rated their own job performance significantly higher than their immediate supervisors did (Hypothesis 3b), because a difference indicates that both ratings are not equally valid. One rationale behind Hypothesis 3c is that employees in higher education institutions possess more knowledge of what performance standards are expected than do employees in production firms. A further rationale is that supervisors in higher

education institutions are more skilled in rating subordinates' performance than are supervisors in production firms. This hypothesis may, in its rationale, overlap Hypothesis 3d somewhat because higher education institutions do have more educated employees and probably also more employees in middle- and higher-level positions.

The rationale underlying Hypothesis 4 is evident from several investigations, particularly in industrial countries but also in African countries such as South Africa (Orpen, 1978, 1979).

Hypothesis 5 is based on thinking and theories about what creates a positive relationship between satisfaction and performance (e.g., Lawler & Porter, 1967; Wexley & Yukl, 1977). An important correlate of this relationship is thought to be extrinsic and intrinsic rewards that are made contingent upon performance. The more clearly this contingency is established and communicated to the employees, the more easily they perceive that high performance leads to rewards that may satisfy their needs--that is, high job satisfaction. Higher education institutions may provide their staff with rewards that are more contingent upon performance than is the case in production organizations. In addition, employees in higher education organizations may possess a greater awareness of this contingency, partially because of their involvement in organizational policies and procedures. This contingency tends to motivate people to perform. Some manage to be high performers, hence tend to experience high job satisfaction because many of their needs are met. Some manage to be moderate performers, hence tend to experience moderate job satisfaction. And some do not manage to perform much (because of lack of skills, knowledge, abilities,

and/or personality factors), hence tend, in general, to experience low job satisfaction.

Hypothesis 6 is based on the fact that organizational climate is conceptualized and operationalized in accordance with the organization/description orientation, and job satisfaction in accordance with the individual/evaluation orientation. Then the hunch is that personalistic evaluations (job satisfaction) vary more than organizational descriptions (organizational climate); that is, employees should agree more on climate perceptions than on perceptions of job satisfaction.

The rationale behind Hypothesis 7 is that there are more white-collar workers in higher educational institutions than in production firms. In Tanzania, as in most countries, it is probably true that white-collar workers (mostly nonmanual labor) are more satisfied than blue-collar workers (manual and often hard labor). Additionally, it is probably true that Tanzanian higher education institutions in general offer their employees better rewards because of higher educational and position status than do production firms.

Based on several research results (e.g., MacEachron, 1977; Weaver, 1977, 1978, 1980), it was hypothesized that demographic variable such as age, educational level, position level, and number of years worked in the organization are correlates of job satisfaction (Hypothesis 8). It also seems logical that all four of these demographic variables are positively correlated. This last assertion is also tested in Chapter IV.

According to Korman's theory (1970), an ego-enhancing work environment increases performance level. Therefore, it was hypothesized that educational as well as position level are correlates of job performance (Hypothesis 9).

Based on several investigations concerning correlates of the performance/satisfaction relationship (e.g., Abdel-Halim, 1980; Lawler & Porter, 1967; Triandis, 1959), it was hypothesized that those demographic variables that are correlates of both job satisfaction and performance could also be correlates of the relationship between satisfaction and performance (Hypothesis 10).

The rationale behind Hypothesis 11 is that the satisfaction/performance relationship seems to increase in strength (more positive correlation) the more intrinsic rewards are derived from high job performance. This means that high job performance tends to bring about higher satisfaction of higher-order needs, given that employees possess such higher-order needs (Abdel-Halim, 1980). It also means that low job performance tends to bring about lower job satisfaction (Porter & Lawler, 1967). Higher-order needs, such as recognition, status, prestige, self-esteem, and self-actualization are primarily derived from the job itself. They are contingent upon performance and are mostly self-administered. Such intrinsic rewards tend to increase with increasing positive amounts of job characteristics and organizational climate, both of which are regarded as intrinsic rewards. Hence, a stronger performance/satisfaction relationship for higher positive amounts of job characteristics and of organizational climate was hypothesized.

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In hypotheses discussed earlier (Hypotheses 8 and 9), certain correlates of job satisfaction and performance were hypothesized. Hypotheses 12, 13, and 14 state interaction effects on job satisfaction and performance. Hypothesis 12 is the basis for testing whether there is an interaction effect (and main effects) of educational and position level on job satisfaction. The hunch is that the effect of position level on job satisfaction is greatest for the lowest educational level. If the relationship between position level and job satisfaction varies with educational levels, there is an interaction effect of educational and position level on job satisfaction.

Hypothesis 13 is the basis for testing whether there is an interaction effect (and main effects) of job characteristics and organizational climate on job satisfaction. The hunch is that the effect of job characteristics on job satisfaction is greatest for the lowest level or amount of organizational climate. If the relationship between job characteristics and job satisfaction varies with levels of organizational climate, there is an interaction effect of job characteristics and organizational climate on job satisfaction.

The same rationale is argued for Hypothesis 14 as regards the interaction effect of job characteristics and organizational climate on job performance.

Hypothesis 15 is based on research findings (e.g., Wanous, 1974) that performance causes intrinsic satisfaction and that extrinsic satisfaction causes performance. Employees with mostly higher-order needs (intrinsic) derive job satisfaction from their performance. Employees with mostly lower-order needs (extrinsic) derive performance

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from their job satisfaction. In the Tanzanian work culture, it is assumed that lower-order needs are stronger than higher-order needs, and lower-order needs must be met to a certain degree before higher-order needs arise (Maslow, 1954). Hence, it was hypothesized that the causal direction is from job satisfaction to job performance rather than the other way around.

Overview

The research findings relevant to the stated hypotheses are described in Chapter II, which is a review of the literature on job characteristics, organizational climate, job performance, and job satisfaction. In Chapter III the design of the study and the methods of analysis are described. Chapter IV consists of analyses of data to test the stated hypotheses, with reference made to the literature review. Finally, Chapter V is a summary of the study, with conclusions and recommendations for future research related to this field.

CHAPTER II

REVIEW OF THE LITERATURE

In this chapter, theories of each major construct or variable used in the research are developed in light of the literature. Furthermore, operationalizations of each variable and the logical link between definitions and operationalizations are discussed. The major constructs or variables and their theories are considered in the following order: job characteristics, organizational climate, job satisfaction, and job performance.

Job Characteristics

Researchers have shown that job content is one of the major determinants of job satisfaction (Argyris, 1957, 1962, 1964; Herzberg et al., 1959; Likert, 1967; Thorsrud & Emery, 1969). If organizations manage to design jobs so that some basic psychological requirements are met, the quality of job performance is also likely to increase (Wexley & Yukl, 1977), and alienation is likely to decrease (Blauner, 1964; Seeman, 1961). Therefore, an important task in this research is to identify and measure fundamental job characteristics and to investigate the relationship between this variable and others, such as job satisfaction and performance. Herzberg, in his motivation-hygiene theory, proposed that the motivators or satisfiers, when they were present in the job situation, increased job satisfaction (Herzberg

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et al., 1959). He argued that job design geared toward vertical enrichment of jobs increased job satisfaction (Herzberg, 1968).

Argyris (1964) asserted forcefully that job enrichment is a significant factor in personal and organizational growth and development. A Norwegian researcher, Thorsrud, in his investigation of "industrial democracy" (workers' participation), found that basic psychological job requirements should be met in order to increase job satisfaction as well as work motivation (Thorsrud & Emery, 1970). These job requirements are:

1. Need for job content that requires something more than persistence and includes some task variation.
2. Need to learn something while performing the job.
3. Need to make decisions, at least in the area in which the employee is working.
4. Need of recognition, at least a certain degree of interpersonal support and respect on the job.
5. Need to recognize a relation between the work and the environment, at least a relation between the work and what is regarded as useful and valuable.
6. Need to recognize that the job is in accordance with a desired future, even though that future may not necessarily mean promotion.

These job requirements are to a great extent consistent with Maslow's higher-level needs in the need hierarchy and with Herzberg's motivators or satisfiers. The job requirements constitute a basis for job design and redesign in order to increase the intrinsic value of the

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job itself. Jobs are enriched by allowing employees more responsibility, self-direction, and an opportunity to perform interesting, challenging, and meaningful work. Ford (1973) came up with partially similar factors for increasing the intrinsic value of the job. He suggested the following steps for redesigning jobs:

1. Combine several jobs into a larger job involving a wider variety of skills.
2. Give each employee a natural unit of work ("work module") so he/she can complete a meaningful task.
3. Allow employees more responsibility for quality control and self-determination of work procedures.
4. Allow employees to deal directly with clients, support personnel, and persons performing related jobs.
5. Provide channels of performance feedback so that an employee can monitor and self-correct work behavior.

Studies of work motivation, both at the worker level and at the managerial level, have shown that the construct of work motivation is positively related to job characteristics (Scott, 1966; Thorsrud & Emery, 1964). Work motivation deals with how behavior gets started, is energized, sustained, or stopped. It is a driving force toward performance and an expectation of satisfaction at work. Nonroutine, nonrepetitive jobs are likely to function as positive motivators of behavior (Hulin, 1971). In a study conducted by Schwab and Cummings (1973), it was found that job characteristics are related to work motivation, when this construct of motivation was operationalized in accordance with expectancy theory. Herzberg's and Ford's findings as

well as research by a number of other authors (Hackman & Lawler, 1971; Hackman & Oldham, 1975; Stone & Porter, 1975) suggested that enriching the job content by giving employees more responsibility and self-direction, more interesting and challenging jobs, meaningful work, and an opportunity to perform, grow, and develop during the job contribute to an increase in work motivation.

One approach to job analysis is to view the job as a component of a sociotechnical system. In such a system the process of production requires both a technology to transform raw materials into output or students and facilities to graduate people, and a social structure to link the employees to the technical process or to link the teachers to students and facilities. Interaction between technical and social components of the system determines characteristics of the jobs that employees perform. On the basis of such a sociotechnical approach, Rousseau (1978) defined job characteristics as a function of three dimensions:

1. Task characteristics: reflect physical or technical requirements of a job (such as the opportunity to use a variety of skills or to make decisions).
2. Role characteristics: reflect constraints and demands placed on the employee (such as ambiguity in job specifications).
3. Coordination: the extent to which the employee receives materials, resources, and support from others on whom he/she depends.

Rousseau used "task characteristics" as one of three measures or components of "job characteristics," whereas most of the researchers in this field of study have used "job characteristics" the same

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way as Rousseau did "task characteristics." Rousseau applied constructs from both the idiographic and the nomothetic dimensions of a social system (Getzel, 1958) to describe job characteristics. He saw role characteristics as measures of the nomothetic dimension, whereas he viewed task characteristics primarily as measures of the idiographic dimension. In addition, Rousseau saw coordination as penetrating both the nomothetic and idiographic dimensions because coordination goes on at the institutional level, at the group level, and at the individual level, as well as between these levels. In this study the concept of job characteristics was used, as it has been in the majority of research.

No authors seem to have come up with a forceful or authoritative conceptual definition of "job characteristics," even though many researchers have hypothesized about the influence of job characteristics or have explained relationships between job characteristics and attitude or behavior variables.

Hackman & Lawler (1971) discussed the following characteristics of jobs that have a high motivational force toward performance:

1. The job must allow a worker to feel personally responsible for a meaningful portion of his work.
2. The job must provide outcomes that are intrinsically meaningful or otherwise experienced by the individual as being worthwhile.
3. The job must provide feedback about what is accomplished.

Hackman, Oldham, Hanson, and Purdy (1974) developed a theory that relates the restructuring of work content to three major psychological processes, which are the same as the characteristics of motivating jobs discussed by Hackman and Lawler (1971). It seems that a

conceptual definition of "job characteristics" should be worked out on the basis of such psychological processes related to the job content. Hackman et al. formulated a hypothesis that many researchers have not been able to reject: Three critical psychological states--experienced meaningfulness, experienced responsibility, and knowledge of results--determine an individual's motivation and satisfaction on the job, which in turn affects performance, absenteeism, and turnover. According to Hackman et al., these psychological processes are present when the job content is high on the core dimensions of job content. The core dimensions as described by Hackman and Oldham (1975) in the Job Diagnostic Survey (JDS) are skill variety, task identity, task significance, autonomy, and feedback from the job itself. Thorsrud's psychological job requirements also show that the job context may contribute to critical psychological states of the job incumbents (Thorsrud & Emery, 1970). And particularly in a culture like that of Tanzania, the job context probably means as much as the job itself in terms of experienced meaningfulness of the work and other potential psychological states that may determine work motivation and job satisfaction. Job context constitutes those aspects or factors not inherent in the job itself--factors related to the work environment or atmosphere surrounding the job. Supervision, interpersonal relations, conflict resolution climate, and leadership style are some factors or aspects of job context.

In brief, the history of the development of significant job-characteristic measures is as follows:

Turner and Lawrence (1965) used six measures of job content: variety, autonomy, required interaction, optional interaction, required

knowledge and skill, and responsibility. The researchers formulated a linear combination of these measures, which were found to be closely related to each other.

Hackman and Lawler (1971) developed four core job characteristics, partially by adapting items from the scales developed by Turner and Lawrence. The four core dimensions were variety, autonomy, task identity, and feedback. The two dimensions that were the same as in the Turner and Lawrence study, variety and autonomy, were highly inter-correlated ($r = .67$) for a sample of 208 telephone company employees. Hackman and Lawler also identified two additional dimensions--"dealing with others" and "friendship opportunities"--but they did not regard these two variables as centrally related to job satisfaction. However, these two aspects were relevant in exploring "the impact of the interpersonal characteristics of job design" (p. 267).

In a study of job characteristics, Stone and Porter (1975) applied a modified version of the Hackman and Lawler (1971) instrument. However, in their index they added two more job characteristics: "prestige of the job when compared with other craft jobs in the division" and "prestige of the job when compared with all other jobs in the division."

It can be argued that not all jobs in a society can be high on all the identified job characteristics, particularly on Stone and Porter's prestige variable. This variable is clearly an individual job attribute, and people will compete for prestigious jobs. One point of view is that at a macro (societal) level, one cannot increase the number of jobs with high prestige above a certain limit. The sum total

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of job satisfaction in a population, or the total production of a society, cannot be increased through increased prestige of the individual jobs because of the limitation in the number of jobs that can be designed as highly prestigious. When trying to increase individual prestige, it tends to come to a win-lose situation, a zero-sum result. One "presses one button," and another is "pushed out." Prestige can only marginally be used to increase job content, work motivation, or job satisfaction. It is in such a perspective that the national ideology of Tanzania may play a part in promoting job satisfaction and job performance.

Hackman and Oldham (1975) revised the Hackman and Lawler instrument from 1971 and included a fifth core dimension: task significance. This index of job characteristics is called the Job Diagnostic Survey (JDS) and is widely used to measure self-perceived job content. The authors computed within-scale item correlations and between-scale correlations to assess discriminant validity of the scales. The correlation measures of intra-scale item consistency ranged from $r = .56$ to $r = .88$, and the between-scale median correlations ranged from $r = .12$ to $r = .28$. Hackman and Oldham interpreted these results as evidence of the multidimensionality of job content. However, no factor analysis was used to find a factor structure with subvariables of job characteristics that showed relatively high statistical independence.

Sims, Szilagy, and Keller (1976) used a revised version of the six dimensions of the Hackman and Lawler instrument to measure perceived amount of each job characteristic for 1,161 paramedical and support personnel in a U.S. medical center and for 192 managers and supervisors

of a manufacturing company. The researchers factor analyzed the items and concluded that a six-factor varimax solution was the most appropriate interpretation of the factor structure. In this study, "dealing with others" and "friendship opportunities" were found to be separate, independent factors in the structure of job characteristics.

Dunham (1976) conducted a study using the five core dimensions of the JDS with 3,610 employees of a large merchandising corporation. An intercorrelation analysis showed that the within-scale item correlations were generally larger than the between-scale item correlations. However, the variety and autonomy items had relatively high interscale correlations. A factor analysis with oblimax rotations showed that a unidimensional structure for these two scales would be most parsimonious.

Pierce and Dunham (1976) reviewed the literature on task design. They found that very little research had been reported on such critical issues as the dimensionality of perceived job content. The authors concluded that the underlying dimensionality of perceived job content had not been discovered.

Dunham, Aldag, and Brief (1977) conducted an extensive study of the JDS by using 20 varied samples of 5,945 workers in five organizations. Factor analyses identified two-, three-, four-, and five-factor solutions for various samples of respondents. The authors concluded that even though the five-factor JDS scales were confirmed in 7 out of 20 samples, researchers should examine the dimensionality topped by the JDS instrument for each sample.

Rousseau (1978) designed an index of task characteristics by relying on the four core dimensions of Hackman and Oldham's JDS and the

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two additional ones: "dealings with others" and "friendship opportunities." The fourth core dimension, "feedback," was divided into "feedback from agents" and "feedback from the job." In addition, Rousseau added an eighth dimension: "opportunity for learning." The test-retest reliabilities were in the range of .41 to .69, and the internal consistency reliabilities in the range of .51 to .66, with one exception: .36 for task significance. Rousseau concluded that both reliability measures appeared to be satisfactory.

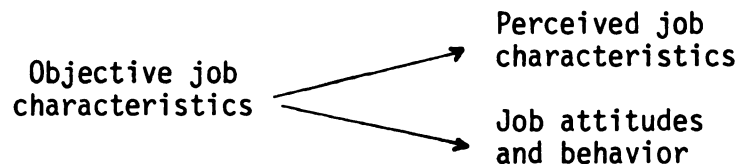
One research problem related to job characteristics is measuring the reliability of different raters of job content. To what extent will ratings of amount of "job characteristics" as perceived by the employee himself, by peers, and by the immediate supervisor agree with each other? Stone and Porter (1975) had these three categories of raters evaluate the amount of each job characteristic in the same employment situation. Coefficients of concordance demonstrated that the ratings of job characteristics by the three sources of ratings were very similar: $r = .87$ ($p < .001$) for variety, $r = .76$ ($p < .01$) for autonomy, $r = .64$ ($p < .02$) for task identity, $r = .58$ ($p < .05$) for feedback, $r = .46$ ($p < .20$) for friendship opportunities, $r = .75$ ($p < .01$) for dealing with others, $r = .82$ ($p < .01$) for prestige (craft), and $r = .78$ ($p < .01$) for prestige (all jobs). The authors concluded that incumbents' ratings of the amount of job characteristics provide a reliable measure of these variables.

Stone and Porter's study was consistent with the study conducted earlier by Hackman and Lawler (1971), who proposed that job characteristics affect employee attitudes and behavior because of their effect on

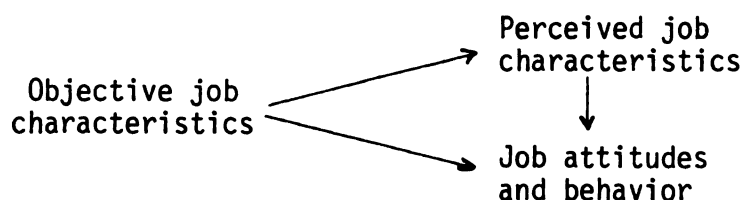
the perceptions employees have of their job characteristics. This can be represented schematically as follows:



The authors found that self-perceived job characteristics have substantial convergence with the assessment of objective job characteristics made by supervisors and researchers. If supervisors' and researchers' ratings are regarded as the "objective" character of the job, the data of Hackman and Lawler strongly suggest that employee job perceptions are based, at least in major part, on objective job characteristics. The authors inferred from the data that objective job characteristics directly caused both perceived job characteristics and employee reactions, such as job satisfaction and performance, rather than objective job characteristics causing perceived job characteristics, which, in turn, caused employee reactions. Hence, the causal structure should be:



However, as long as there is a difference (even though small) between objective and perceived job characteristics, perceived job characteristics may be a mediating variable. As such, there must also be a partial causal link between perceived job characteristics and job attitudes and behavior. Therefore, the causal direction in this variable network would be:



Oldham (1976) also confirmed nondistorted descriptions of employee-perceived job characteristics. The median correlation between employee perception and supervisory ratings of job characteristics was $\bar{r} = .50$, which indicates substantial agreement between the two rater groups.

O'Reilly (1977) criticized the employee-perceptual approach to measurement of job characteristics. He also criticized the potential bias resulting from respondents' providing both independent and dependent measures, such as job characteristics (independent variable) and job performance (dependent variable). Instead, he suggested a multi-rater approach to the measurement of job characteristics.

Job characteristics may not be fixed and objective, but they may, at least partially, be defined through the set of informational cues one receives from other employees about the job. This concept of work relies greatly on social comparison and social learning theory (Bandura, 1969). The new viewpoint that employees may define and react to job characteristics on the basis of informational cues received from others leads to the belief that the same job may be perceived differently by different individuals and in different settings. The same job characteristics may be seen as positive in one setting and negative in another. In an experimental study, O'Reilly and Caldwell (1979) found that informational cues are more important determinants of the

perception of job characteristics than are objective job characteristics. Subjects completing an enriched task with informational cues suggesting that the task was unenriched rated the task significantly lower in skill variety, autonomy, feedback, and task significance than did subjects in an enriched task with enriched cues. And subjects completing an unenriched task with informational cues suggesting an enriched task rated the task significantly higher on the job characteristics than did subjects in an unenriched task with unenriched cues. Positive informational job cues also had a positive effect on perceived job satisfaction. These results suggest that, to some extent, job characteristics may be socially constructed realities. They imply that both informational cues about the job and the objective nature of the job characteristics will influence employee-perceived amount of the job characteristics.

The job incumbent may also receive ambiguous job cues that are difficult to interpret and require a social context for interpretation. Studies of group conformity and influence have shown clearly the power of informational cues when group members are experiencing ambiguous or unstructured situations (Asch, 1965; Sherif, 1935).

Individual differences in the response pattern of job characteristics may be a result of different degrees of socially constructed realities. The perceptual ratings of job characteristics allow for bias introduced by informational cues and normative influence, and by the measurement error inherent in perceptual measures. This error is compounded by measuring both independent and dependent variables at the same time and by using data from the same subject. Probably a valid

point for future research on job characteristics is O'Reilly and Caldwell's (1979) suggestion that one should account for the effect of informational and normative influences in shaping perceptions and responses to work. However, many researchers would say that such an account does not matter because reality for most people is what they perceive as reality (the Rogerian view). This means that only those aspects of a job that are actually perceived or experienced by the job holder can affect his job satisfaction and performance. Positive reinforcement of the value of the various job aspects to employees would, as O'Reilly and Caldwell (1979) found, statistically increase the perceived amount of valued job content, which, in turn, would result in higher job satisfaction and job performance. This seems to be a manipulative approach. Nevertheless, it is also a motivational approach in the management of human resources. The distinction described above is important to one who wants to change job characteristics in a way that might improve performance. One view is to change the job; the other is to change people's perceptions of the job.

As evidenced in the literature, the common way of measuring job characteristics has been to design items related to each defined sub-variable of job content and to let respondents (incumbents, peers, supervisors, researchers) rate each item on a Likert scale for all jobs in an organization or across organizations. Item development for the purpose of obtaining more reliable and valid universal indices of job characteristics is still an ongoing research process. However, Dunham, Aldag, & Brief (1977) argued that there is also a trend in present

research to develop separate indices for various distinctive jobs or groups of jobs within an organization or across organizations.

Organizational Climate

The concept of organizational climate seems to be one of the fuzziest notions in organizational psychology because it can be defined and operationalized in different ways that are not always consistent with each other. Even though "organizational climate" is a fuzzy concept, employees seem to agree more on climate perceptions than on satisfaction perceptions. Climate perceptions seem to serve as relatively stable frames of reference for judging appropriate work behavior. Schneider (1975) described this function of organizational climate in the following way:

It was shown that people in a work setting form climate perceptions because apprehending order in the world is a basic human chore and that these climate perceptions function as frames of reference against which the appropriateness of behavior may be judged for the balance or homeostasis it will achieve with the setting (p. 462).

Organizational Climate as a Dependent, an Independent, and an Intervening Variable

Some researchers have conceptualized and treated this construct as a dependent variable. The focus has been on understanding the causes of climate perceptions. Schneider (1975) stated that employees have described existing or inferred situational practices and procedures, but most researchers have failed to give the various sets of practices and procedures climate labels. The author concluded that organizational climate, conceptualized as a dependent variable, has not been thought of

as a macro construct, but as climate facets. Studies of climate as a dependent variable have been conducted by Dieterly and Schneider (1974), George and Bishof (1971), Lawler, Hall, and Oldham (1974), Payne and Mansfield (1973), and Payne, Pheysey, and Pugh (1971).

Other authors have conceptualized organizational climate as an independent variable, as a cause of job attitudes and behavior (Andrews, 1967; Argyris, 1957; Fredriksen et al., 1972; Lewin et al., 1939; Litwin & Stringer, 1968; Pritchard & Karasick, 1973). According to Schneider (1975), these authors have labeled the various sets of practices and procedures as representing different organizational climates. Schneider concluded that climate, conceptualized as an independent variable, has clearly been a macro construct--a global measure of what the organization is.

Still other authors have conceptualized climate as a mediating or intervening variable that serves as a cognition, mediating between organizational and individual behavior (Schneider, 1975). Researchers in this category have also given the various sets of practices and procedures climate names. McGregor (1960) spoke of a "Theory X" or a "Theory Y" climate, Likert (1967) a "system (1,2,3,4) climate," and Hall and Schneider (1973) a "climate for psychological success." Hence, these researchers used organizational climate in a predefined way.

The Macro Setting--Environmental Forces on Organizational Climate

The preceding discussion suggested that several influences contribute to the shaping of an organization's climate. Environmental forces both outside and inside the organization contribute to the

development of a particular organizational climate. Figure 1 summarizes a simple systems model of the relationships in which organizational climate is the focus of interest (Payne & Pugh, in Dunnette, 1976, p. 1127).

First of all, the wider economic and cultural environment influences the shaping of an organizational climate. Economic, social, political/ideological, and urban/rural characteristics in the macro environment have an effect on organizations' internal climate. This is particularly the case in a country like Tanzania because it has a clearly formulated and unified political ideology, which is an ongoing implementation process in work organizations as well as in agricultural societies (ujamaas). The particular cultural characteristics of an urban or rural environment may also have significant effects on the climate of organizations within this environment. Furthermore, the broader economic and cultural environment also influences an organization's context and structure, the employees, and their immediate environment. In turn, the organizational context, the organizational structure, the employee, and the employee's immediate environment all have a direct or indirect influence on the organizational climate. For example, a highly specialized and prescribed role structure in a centralized-authority system is unlikely to encourage risk taking. The individual's needs, abilities, satisfactions, and goals affect his perceptions. Because perceptions of individual attributes are subjective in nature, the "individual" appears in a box with broken lines (Figure 1). These individual perceptions influence the organizational climate, which is also perceptual in nature.

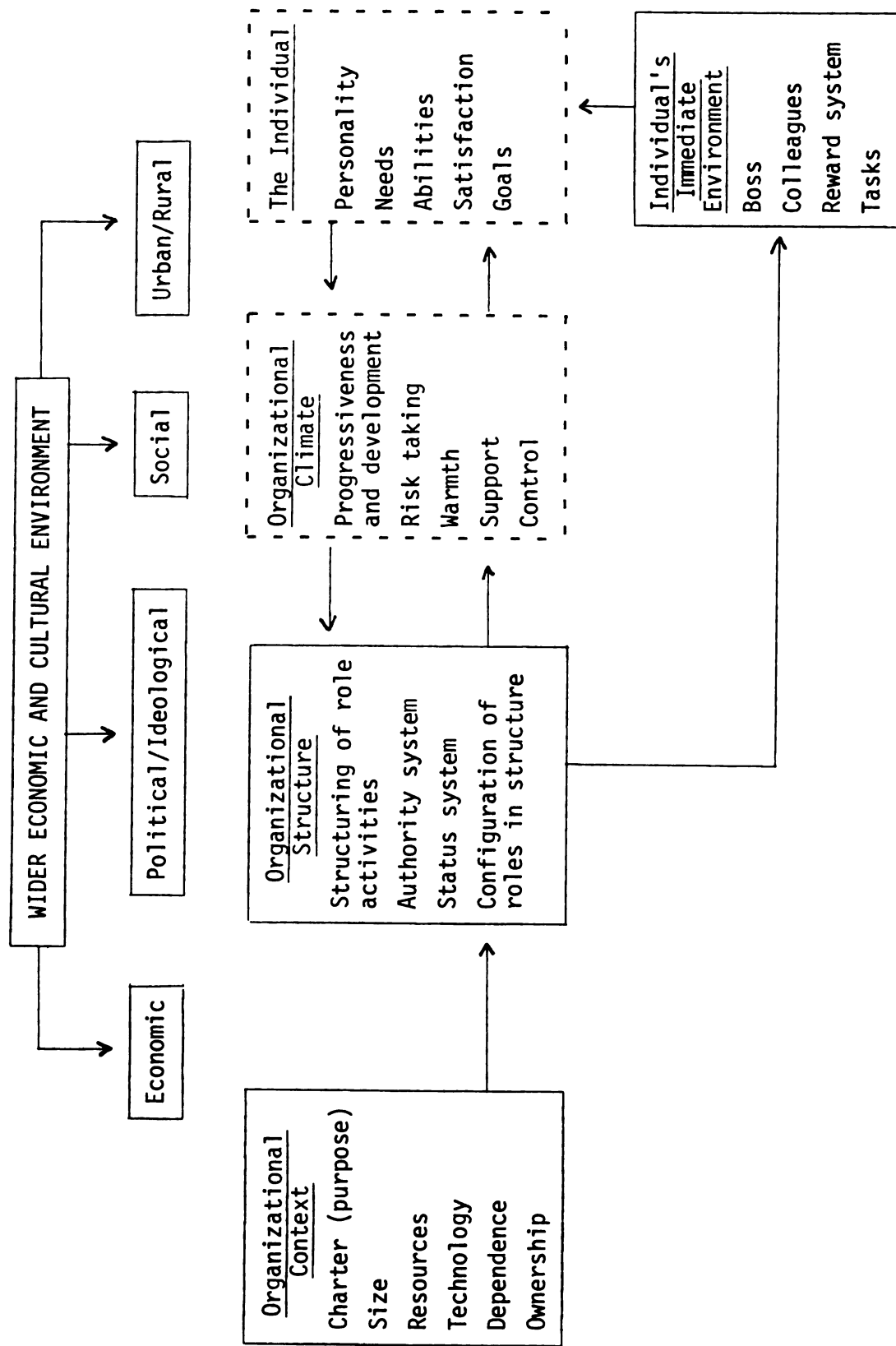


Figure 1.--Major influences on organizational structure and climate (from Dunnette, 1976).

The organizational climate has an impact on the development of the organizational structure. Further, structural changes are likely to have an effect on the individual's immediate environment, which affects the individual, who affects the organizational climate, according to the model of Payne and Pugh. Therefore, organizational climate is highly intertwined with other variables at the individual, group, and organizational levels. On the following pages, the construct of organizational climate is defined and described in more ways, according to different approaches to the study of this construct.

Organizational Structure and Organizational Climate

Historically, the distinction between climate and structure has been an interesting one. Some researchers, including classical organization theorists, have been preoccupied with the effect of organizational structure on job attitudes and behavior (Porter & Lawler, 1965). Many later researchers, or modern organization theorists, have been more occupied with studying the climate aspect, participative-oriented leadership styles, human relations training, and nonfinancial needs of employees as methods of improving organizational administration and leadership. Bennis (1959) summed up this point when he stated that the classical theorists talked about "organizations without people," whereas modern theorists talked about "people without organizations." Most early studies concentrated on configurational aspects of structure, such as number of hierarchical levels, span of control, and organization size (Urwick, 1947; Worthy, 1950). Later, researchers became interested

in a whole framework of related structural variables (Hicksom, Pugh, & Pheysey, 1969; Porter & Lawler, 1965; Woodward, 1965).

The construct "organizational climate" has been widely studied, particularly during the past 10 to 15 years. Researchers are still exploring the conceptual and operational basis of this construct. Most investigators have studied multiple dimensions of organizational behavior under the umbrella of the single concept, organizational climate. McGregor (1967) presented the formula

$$P = f(I_{a,b,c,d,\dots} \quad E_{m,n,o,p,\dots}),$$

which says that the performance, P , of an individual is a function of individual characteristics, I (knowledge, skills, motivation, attitudes), and certain aspects of the environmental situation, E (job nature, rewards, leadership, organization climate). The operationalization of E has often been left open, especially in terms of whose view of E is to be measured. Schneider and Bartlett (1970) argued that "the standard of what is 'good' and the assessment of the level of particular organizational climate is compared to their own normative framework" (p. 498). Little research has been done on validating employee perceptions of organizational climate through researchers' evaluations and/or external consultants' evaluations of the same organizational climate. Theoretically, one encounters difficulties when trying to answer the question of whether the perceived or actual organizational climate should be considered in assessing various characteristics of organizations. Furthermore, confusion exists in the research literature concerning the unit of analysis and the unit of measurement. Climate has been

measured partially at the organizational level, partially at the sub-unit or group level, and partially at the individual level. Finally, climate has been measured partially by descriptive item-stimuli and partially by affective/evaluative item-stimuli. Such confusion has resulted in the diffuse, fuzzy, ill-defined, and poorly operationalized concept of organizational climate.

Three Major Approaches to the Study of Organizational Climate

In this section, major theoretical concerns and research relevant to organizational climate within the framework of three approaches conceived by James and Jones (1974) are reviewed. The first is the "multiple measurement/organizational attribute approach," which regards organizational climate exclusively as a set of organizational attributes or main effects measured by different raters using both objective and perceptual-subjective methods of measurement. The second is the "perceptual measurement/organizational attribute approach," which also regards climate as a set of organizational attributes, but measured by employee perceptions. The third is the "perceptual measurement/individual attribute approach," which regards climate as an individual attribute, measured by employee perceptions.

The multiple measurement/organizational attribute approach.--

Forehand and Gilmer (1964) defined organizational climate in line with the multiple measurement/organizational attribute approach:

a set of characteristics that describe an organization and that
 (a) distinguish the organization from other organizations,
 (b) are relatively enduring over time, and (c) influence the
 behavior of people in the organization (p. 362).

According to this approach and the preceding definition, climate is conceived of as organizational attributes measured by individual perceptions and more objective evaluations of such climate dimensions as organization size and structure. James and Jones (1974) said that, according to this approach, climate dimensions are size, structure, systems complexity, leadership style, goal directions, and so on. Some of these dimensions could be measured more objectively by external observers than other factors. According to Forehand and Gilmer's definition, one assumes that an internally consistent and homogeneous set of measurements for organizational climate exists, a climate that distinguishes one organization from other organizations. The intraorganizational climate variance is assumed to be smaller than the interorganizational climate variance. Forehand and Gilmer also assumed that climate is relatively permanent over time, when it is measured as an organizational attribute.

Many researchers have conducted studies based on employee perceptions of organizational climate. However, such authors as Evan (1963), Lawrence and Lorsch (1967), and Palmer (1961) used objective measures. Perceptual measures must be assessed at the organizational level, according to this approach. Items that characterize individual work situations more than organizational aspects do not belong in the multiple measurement/organizational attribute approach, but rather in the perceptual measurement/individual attribute approach.

To validate the construct of organizational climate, various measures of this variable are necessary along the following lines:

- various degrees of objective/subjective measures
- different raters of climate dimensions: manager rating, employee rating, researcher rating, external consultant's rating
- all measures of organizational climate as organizational attributes (discussed in later sections of this chapter)

Litwin and Stringer (1968) conducted an experimental study of three different "created" organizational climates: an authoritarian-structured climate, a democratic-friendly climate, and an achieving business climate. The 45 subjects rated their respective climates, and their perceptions were found to be in agreement with the actual conditions.

Pugh, Hickson, Hining, and Turner (1968) asserted that organizational climate, as conceived by Forehand and Gilmer, refers to components of situational variance or structure. This becomes more apparent when related to Figure 1. In this organizational model, the major components of situational variance are political-ideological values and other factors in the larger economic and cultural environment; organizational context; structure; and various subsystem and subgroup contexts, structures, values, and processes.

In the Litwin and Stringer (1968) investigation, the climate aspect studied was leadership style, which is a leadership process. Even though the actual role-played and perceived situations agreed, James and Jones (1974) concluded: "The inclusion of perception added little but an alternative measurement of the experimental manipulated situational variables." They added: "Organizational climate appears synonymous with organizational situation and seems to offer little more

than a semantically appealing but 'catch-all' term." There exist, however, other definitions of and approaches to organizational climate.

The perceptual measurement/organizational attribute approach.--

A definition of organizational climate that is in line with the perceptual measurement/organizational attribute approach is that of Campbell, Dunette, Lawler, and Weick (1970):

a set of attributes specific to a particular organization that may be induced from the way the organization deals with its members and its environment. For the individual member within an organization, climate takes the form of a set of attitudes and expectancies which describe the organization in terms of both static characteristics (such as degree of autonomy) and behavior-outcome and outcome-outcome contingencies (p. 390).

1. Perceptual measures and organizational attributes.

According to this approach, organizational climate is a perceptual measure of organizational attributes, not of individual differences in job attitudes. However, there seems to be a logical inconsistency in the perceptual measurement/organizational attribute approach. James and Jones (1974) argued that, on one hand, this measure of organizational attributes has been shown to vary across levels of explanation, such as the overall organization, the subunit (department), and the work group. On the other hand, some researchers consider organizational climate to be a psychological process that operates at a level of explanation separate from the objective organizational characteristics and organizational processes. This seems to confound stimulus properties with response properties. Forehand and Gilmer (1964) stated that organizational attributes represent stimulus conditions. Perceptually measured organizational climate, on the other hand, represents a set of

organizational characteristics and processes. James and Jones (1974) said further that:

The psychological process level of explanation places emphasis on the characteristics of responses, namely individual differences which may or may not be congruent with stimulus conditions. Thus, it appears inconsistent to require the same set of organizational climate data to be accurate measures of organizational stimuli and simultaneously to be representative of the response-oriented psychological process level of explanation (p. 1105).

This seemingly logical inconsistency necessitates a further analysis of the concept of organizational climate.

Perceptual measures are often obtained from items that characterize individual work situations more than organizational aspects or dimensions. Furthermore, employee feelings have greatly influenced the description of climate items. The implicit assumption underlying measurement of job attitudes is precisely that such feelings about personal job aspects are elicited. These two facts result from the methods of measurement used by most researchers (Johannesson, 1973). Because researchers have used primarily the same approach to measure both climate and job attitudes, a potential redundancy exists between climate and job satisfaction measures. This has been the major difficulty in providing an operational definition of organizational climate as compared to job satisfaction. For example, Johannesson (1973) included in his climate index many items that highlight job aspects of the individual employee rather than the total organization, the subunit, or the work group. This is certainly one reason why the author concluded that five of the six dimensions of organizational climate appear similar to those commonly found in satisfaction research. Or, put in the language of the hypothesis stated by Johannesson: Most of the variance in a

perceptual measure of organizational climate could be subsumed in factors traditionally found in satisfaction research. Such results are expected because of the tautological operational definitions of the two constructs, organizational climate and job satisfaction. The point is, as Guion (1973) stated, that perceptions of organizational climate, whether by employees or by consultants, can be used as estimates of attributes of organizations and not of individuals. The prerequisite is that organizational climate has to be defined and operationalized as a descriptive measure of organizational attributes and not as an evaluative measure of individual attributes, as is the case in measurement of job attitudes.

2. Unit of analysis. Schneider (1973) stated that "the researcher must be clear about the level of his research question so that the data collected correspond to the level of the phenomenon predicted." Organizational climate items and managerial climate items need not represent the same explanation level. Graham (1969) found that for a manager respondent group, the items that most characterized organizational climate for subordinates formed two relatively independent components: managerial climate and company climate. Results from subordinate groups failed to differentiate between these two components. The author presented two possible interpretations of his findings:

1. It is possible that company climate has much to do with determining the kinds of people who are likely to rise to managerial positions. Hence, from the point of view of subordinates, company and managerial climate might in fact tend to go hand in hand.
2. Subordinates are simply less able or less inclined to make discriminations between general company policy and the policies specific to their immediate superiors (p. 39).

The chosen unit of analysis is related to the degrees of freedom for error. The choice of unit of analysis is not an either-or problem. The procedure for determining the unit of analysis should be one of carefully defining the research problem and then making the choice of unit (Schneider, 1973). If a researcher decides to use organizational climate as an index of each person's "psychology of the organization," it is appropriate to develop measures in which individuals are the unit of analysis (Schneider, 1975). The author highlighted this point further:

A common strategy is to write a set of somewhat molar descriptors, administer them to people in an organization and factor analyze the resultant item-item correlation matrix. It is clear that the resultant factors will reflect the individual differences in the way people report the systems practices and procedures. These factors, because they represent individual differences, should not be used in research when the chosen unit of analysis is other than the individual (p. 470).

However, if organizational climate is supposed to reveal organizational differences, the climate measure must be developed with the organization as the unit of analysis. Schneider (1975) elaborated on this:

The reliability across participants in a common work setting can be built on by pooling item responses in a setting and factor analyzing the item intercorrelations obtained across settings. The resultant factors will represent differences between settings; the factors can be used to reveal system, not individual, differences (p. 470).

A third possibility occurs when one wishes to assess organizational climate, but no existing measure seems relevant. Then a potential strategy is to administer a survey to the employees, calculate means and standard deviations, and retain items with low standard deviations. These are the items on which people in the organization

agree. This should, according to Schneider (1975), be done, rather than factor- or item-analyzing responses.

Drexler (1977) investigated organizational climate as a perceptual measurement/organizational attribute with respect to intra- and interorganizational climate variance. He found that there is a main effect of organization on organizational climate. The main effect of organization explained 42.2% of the variance. Drexler also found an organizational subunit climate variance, but this was much smaller than the organizational climate variance. This was taken to indicate that organizational climate is a useful concept if operationalized and analyzed at the organizational level in accordance with Schneider and Snyder's (1975) definition.

3. Accuracy of the climate perceptions. Another problem related to the perceptual nature of organizational climate is the accuracy of climate perceptions. Guion (1973) concluded that if climate is considered an organizational attribute but measured perceptually, the accuracy of perception should be validated against objective, external measures of the situation or at least against consensus of perceptions. Accuracy would imply consensus, but consensus does not necessarily imply accuracy because employees may share inaccurate perceptions of the organizational climate. Employee perceptual measures of organizational climate could be validated by external consultants' ratings of the same climate. This last measure is also a subjective one, even though regarded as more objective than employee perceptions.

An objective climate measure is the Environmental Assessment Technique (EAT). EAT is a crude measure--an eight-variable index based

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on institutional size, student intelligence, and the proportion of students studying various subjects classified into six categories. Astin and Holland (1961) compared the EAT measures with the perceptual measure of the College Characteristics Index (Pace & Stern, 1958). They found sizable correlations between different ETA and CCI dimensions, such as intelligence factor and understanding (.70), intellectual orientation and deference (-.55), and social orientation and narcissism (.59).

Astin (1963) further validated the EAT by relating it to 39 climate-like items, such as "students are more inclined to pursue their own individual projects than to engage in group activities." Seventy-five percent of the correlations were significantly different from zero. Stern (1970) used teacher absenteeism, teacher turnover, pupil absenteeism, and other indicators as a measure of objective organizational climate. He correlated these objective indicators with subjective organizational culture dimensions and found correlations ranging from .45 to .70.

Based on these and other studies of the relationship between objective and subjective climate measures, Payne and Push (in Dunnette, 1976) concluded that "perceptual climate measures have some validity and do correlate with objective, nonperceptual climate indicators" (p. 1145).

The perceptual measurement/individual attribute approach.--

In accordance with the perceptual measurement/individual attribute approach, Schneider and his associates (Schneider, 1972, 1973; Schneider & Bartlett, 1968, 1970; Schneider & Hall, 1972) described organizational climate as a set of summary or global evaluations of job events based on the interaction between actual events and the

perception of those events. This interaction between personal and organizational characteristics is a major point of the approach. Likert's (1961, 1967) interaction-influence model emphasizes employee perceptions of components of the organizational culture or climate. According to this model, causal variables like organizational structure and degree of centralization interact with personality to produce intervening variables (motivation, trust, and confidence), which, in turn, make it possible to interpret the relationship between causal and output variables, such as job satisfaction and performance. According to Friedlander and Margulies (1969), Likert's view suggests that causal variables are measured by means of the perceptions of the individual whose behavior is being studied. Hence, these authors stated that organizational climate is not an abstract property but rather an interaction between causal variables and personality. "Organization climate is as it is personally perceived, just as is job satisfaction" (p. 173). Schneider and Hall (1972) were basically reasoning along the same line as Friedlander and Margulies when they stated that "in forming climate perceptions, the individual acts as an information processor, using inputs from (a) the objective events in and characteristics of the organization and (b) characteristics (e.g., values, needs) of the perceiver" (p. 447). Schneider and Hall regarded organizational climate as an intervening variable because it is caused by discrete experiences and causes later behaviors. According to this approach, organizational climate is not an independent variable that can be directly manipulated, as can work conditions and formal structure. Nor is organizational climate an output or dependent variable in the sense that job

performance and turnover are outputs. The authors noted further that

Climate is a perception that results from the numerous events occurring to and around people and may affect day-to-day job experiences. Climate is an outcome only in the sense that it is a global summary of perceptions rather than the perception of a discrete event (p. 448).

Schneider and Hall (1972) stated that because climate has often been used as an independent variable, a predictor of future outcomes, it seems that there is a need for more research on the antecedent factors of work climate to further our conceptual and practical understanding of the concept.

According to the perceptual measurement/individual attribute approach, organizational climate is seen as an individual attribute. Schneider (1973), for example, wrote:

The concept of climate in the present research must be described as personalistic; climate is an individual perception. There was no attempt to restrict the climate definition to perceptions shared by members of a workgroup or organization. As stated elsewhere (Schneider & Bartlett, 1970), "what is psychologically important to the individual must be how he perceives his work environment, not how others might choose to describe it" (p. 254).

First of all, the focus on climate as an individual attribute is a function of both the unit of measurement (the individual) and the level of exploration (predicting individual behavior). Second, the interaction, intervention, and perception of personal and organizational characteristics take place in the individual and therefore are individual attributes. The problem of accuracy and/or consensus of climate perceptions is not a question when climate is treated as an individual attribute because it is the individual's perceptions that are important, not the objective situation (Guion, 1973).

Pritchard and Karasick (1973) seemed to be in agreement with Likert (1961), Friedlander and Margulies (1969), Schneider and Hall (1972), and Schneider (1973) when they assumed that organizational climate interacts with such individual-difference variables as needs and values in influencing behavior. Other authors have also considered this interaction, a characteristic of the perceptual measurement/individual attribute approach (Andrews, 1967; Campbell et al., 1970; Forehand, 1968; Fredriksen, 1966; Lawrence & Lorsch, 1969; Litwin & Stringer, 1968; Pace & Stern, 1958; Sells, 1963; Vroom, 1960).

Some of the criticisms of organizational climate as a perceived organizational attribute are also criticisms of climate as an individual attribute. For example, House and Rizzo (1972) demonstrated that many organizational climate dimensions described in the research literature measure the same constructs as leadership and role structure. Schneider and Bartlett (1968) identified organizational climate dimensions such as "managerial support" and "managerial structure," which, in fact, are leadership dimensions.

Forceful critiques of the perceptual measurement/individual attribute approach were made by Johannesson (1973) and Guion (1973). The first author concluded that assessing climate by means of perceptual self-report measures may result in the replication of the work attitude literature. The second researcher stated that the conceptualization of organizational climate as an individual attribute amounted to a rediscovery of the "satisfaction wheel." Also, Schneider and Snyder (1975) made a relatively clear distinction between organizational and individual attributes. This led to their distinction between

organizational climate and job satisfaction, which will be discussed in the next section.

In conclusion, the three approaches to the study of organizational climate are the multiple measurement/organizational attribute approach, the perceptual measurement/organizational attribute approach, and the perceptual measurement/individual attribute approach. The second approach could easily be subsumed under the first approach as one particular measurement of climate as an organizational attribute. The major strategy used by almost all organizational climate researchers lies in the "nomothetic" research, which seeks to discover the laws governing all cases (organizations).

Distinctions Between Organizational Climate and Job Satisfaction, and Between Climate and Job Characteristics

One major question facing later researchers has been to make a better distinction between organizational climate and job satisfaction. Schneider and Snyder (1975) asserted that a logical and empirical distinction between these two concepts is possible if (a) both variables are properly conceptualized and (b) each variable is assessed according to an appropriate level of analysis.

The authors stated that

neither of these conditions have been particularly well met by previous investigations. Notably, the literature on satisfaction has been characterized by a disagreement about conceptual definitions, and although climate researchers have been more likely to agree on definitions, across climate studies there appears to be confusion about level of analysis.

The researchers suggested that organizational climate should be conceptualized as a summary perception that people have of an organization,

a global impression of what the organization is. These perceptions should be perceptions of organizational events and conditions, and they should be descriptive in nature, not evaluative/affective. Therefore, an item of an organizational climate index, such as "I like the fact that my co-workers are well-read," cannot be used because the item is evaluative/affective. On the other hand, an item such as "My co-workers keep up with international events" is descriptive in nature. All items constituting an organizational climate index must be descriptive. An item related to "perceived reward/performance relationships" is also questionable as an organizational attribute because it refers directly to expectancy theory in work motivation. Such an item is attitudinal rather than situational or descriptive (James & Jones, 1974). This way of conceptualizing and operationalizing the climate variable is in accordance with the perceptual measurement/organizational attribute approach stated by James and Jones (1974). Schneider and Snyder (1975) conceptualized job satisfaction as a personalistic evaluation of conditions existing on the job or outcomes that arise as a result of having a job. Job satisfaction is perceptions at the individual level of internal responses (feelings) and consists of filtered and processed perceptions, perceptions filtered through the individual's system of norms, expectations, and so forth.

In summary, organizational climate is organization/description oriented, whereas job satisfaction is individual/evaluation oriented. The variables are distinguished along two dimensions: organizational-individual (unit of analysis) and description-evaluation. Based on such a distinction, Schneider and Snyder (1975) hypothesized that people

within an organization should agree more on their description of the climate than on their feelings of satisfaction. The authors tested this hypothesis on 50 life insurance companies and used hierarchical groupings (position level) for climate correlations and satisfaction correlations. They compared between-group agreement on climate perceptions with between-group agreement on satisfaction. The data were obtained by taking the average climate or satisfaction scale score for each position (but within each agency) and correlating these scale-score averages across the 50 agencies. The investigators found that for interposition agreement on climate the significant correlations were 80% positive and 20% negative, whereas for interposition agreement on satisfaction, the significant correlations were 61% positive and 39% negative. Across all correlations, 20% were positive and significant for climate, and only 9% of the correlations were positive and significant for satisfaction. The authors concluded that the hypothesis received some tentative support. They wrote that this hypothesis may gain stronger support if future researchers select items for climate measures that have low response variance within an organization but high response variance across organizations. Whether such a procedure would help in understanding the construct of organizational climate and its relationship to output variables such as job performance and satisfaction is another question.

The major distinction between organizational climate and job characteristics is the level of analysis. Ideally, climate items should be operationalized as organizational entities at a descriptive level, whereas job characteristics are operationalized as individual job

entities at a descriptive level. Applying the trichotomy of approaches to the study of organizational climate, job characteristics would be subsumed by the perceptual measurement/individual attribute approach, whereas organizational climate ought to be operationalized in accordance with the multiple measurement/organizational attribute approach or the perceptual measurement/organizational attribute approach. That is, organizational climate is organization/description oriented, whereas job characteristics are individual/description oriented. An example of a job characteristic item is: "The amount of personal growth and development you get from your job." An example of an organizational climate item related to the same content is: "The degree to which organizational policies and practices emphasize personal growth and development among employees." The content of climate and job characteristic items need not and, in most cases, will not have such a close overlap as these two examples show. The main point is that organizational climate items are designed as organizational attributes or entities, and job characteristic items as individual job attributes.

Climate for What? Content of the Items

Another question of theoretical as well as practical concern is: Climate for what? Schneider and Snyder (1975) argued that we speak of a climate for something, and the nature of that something is determined by the purposes of the particular criterion orientation of the researcher. Therefore, each organization may be characterized by many different kinds of climates: climate for pay policies, climate for supervisory style, climate for obsolescence, climate for conflict

resolution, and so on. This points toward the operationalization of facet climates that stand for separate research areas or that can be summed over all facets to represent a summary perception of the organization. Holistic as well as specific climate measures have been developed. The climate scale of House and Rizzo (1972) is a holistic climate measure, whereas specific measures are Litwin and Stringer's (1968) motivation scale, Schneider and Bartlett's (1970) individual differences climate scale, Taylor's (1972) creativity climate scale, and Zohar's (1980) safety climate scale. The trend in climate research seems to be the development of coherent sets of organizational perceptions as different organizational climate measures.

Some researchers have been interested in specific climates rather than an omnibus measure. Fleishman (1953) investigated leadership climate. Litwin and Stringer (1968) investigated practices and procedures under which the n-Ach., n-Aff., and n-Pow. motives would manifest themselves; hence their study was primarily concerned with a climate for work motivation. Schneider and Bartlett (1968, 1970) investigated life insurance agencies and explored climates for new employees. Taylor (1972) researched climates for creativity. Renwick (1975) spoke of a climate for conflict resolution.

Climate research has not reached a sophisticated level regarding what dimensions of climates (practices and procedures) are relevant for understanding particular criteria in specific work units. Schneider (1975) had a conclusive argument: "What does seem to be clear is that dimensions of practices and procedures will probably be differentially relevant depending upon the purpose of the study" (p. 471).

As discussed earlier, climate measures may be aggregated at different levels of analysis. In accordance with one's particular frame of reference and research purpose, one could conceive of true organizational climate, departmental climate, work group climate, and so on. These climates should include survey items with organization, department, and work group, respectively. One research question in the Pritchard and Karasick (1973) study was whether the practices and procedures in work groups are related to work group effectiveness. In this case, the appropriate unit of analysis was the work group, and the conceived climate was a work group climate. The research question determined the unit of analysis.

Development of Organizational Climate Indices

Litwin and Stringer (1968) were two early researchers on organizational climate who developed a useful index of this variable. They defined nine subvariables or aspects of organizational climate: structure, responsibility, reward, risk, warmth, support, standards, conflict, and identity.

To reduce scale overlap and increase the independence of the scales, the authors decided that:

1. Items scored on more than one scale were assigned to the scale with which they had the highest correlation.
2. Items correlating highly ($r < .40$) with two or more scales were either dropped or rewritten to make them more scale-specific.

These two rules are not mutually exclusive, however. An item included in the index on the basis of rule 1 may be excluded according

to rule 2. Whether an item is "scored" on more than one scale is a question of conceptual and definitional clarity of the scales.

To increase the conceptual and definitional clarity of the scales, Litwin and Stringer (1968) stated that:

Two judges experienced in content analysis attempted to sort the items into the scale categories. Where either judge indicated some doubt regarding the assignment of the item to a scale, the item was either dropped or rewritten to increase its scale salience. One of the effects of this was that the Warmth and Support scale was broken into two scales: one describing the qualities of warmth and friendliness, the other describing the amount of task-related support and encouragement experienced (p. 80).

The improved climate measure (28 items) was administered to over 500 managers, supervisors, technicians, specialists, and salesmen in several business organizations. The researchers concluded that seven of the nine scales showed good scale consistency. The mean intracorrelation of these seven scales ranged from $\bar{r} = .23$ to $\bar{r} = .49$. Only the standards and conflict scales had problems of internal consistency ($\bar{r} = .19$ for conflict and $\bar{r} = .21$ for standards). These internal consistency measures seem low, but when using Spearman-Brown corrections for the number of items per scale, the following internal consistency data were obtained: structure (.78), responsibility (.68), reward (.81), risk (.67), warmth (.71), support (.75), standard (.61), conflict (.48), and identity (.79) (Schneider & Bartlett, 1970).

The study showed that the conflict scale measured several different climate properties. The scale was intended to describe situations in which conflict is accepted, confronted, and worked through. However, of those respondents with high conflict scale scores (upper 15% of the sample), only 36% described situations in which conflict was

accepted, confronted, and worked through. The problem with the conflict scale was that the amount of conflict present was not measured. Therefore, Litwin and Stringer stated, "Apparently it is quite difficult to measure the acceptance and confrontation of conflict without picking up the amount of conflict that is present (and often unresolved)" (p. 83). They concluded that, because of its ambiguous interpretation, the conflict scale should be dropped from the questionnaire.

Scale independence, as measured by scale intercorrelations, was found not to be too satisfactory. The strongest relationships were found between the warmth and identity scales ($r = .69$), between the support and identity scales ($.59$), and between the warmth and support scales ($.57$). The researchers concluded that these three scales tap a common climate dimension and that they probably should be combined in future research. The other scale intercorrelations ranged from $r = .18$ to $r = .56$.

Schneider and Bartlett (1968) developed an organizational climate index, which they called the Agency Climate Questionnaire (ACQ). They factor-analyzed the responses to 299 items to determine the dimensions of organizational climate. The final index contained 80 items, and the researchers found six factors or clusters underlying the construct "organizational climate": managerial support, managerial structure, concern for new employees, intra-agency conflict, agent independence, and general satisfaction. The definition of each sub-variable is found in Campbell et al. (1970).

In a later study, Schneider and Bartlett (1970) administered the ACQ measure to 511 managerial and agent personnel in 69 life

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insurance agencies representing one company throughout the United States. They found Spearman-Brown reliabilities (scale internal consistencies) of similar sizes as in the Litwin and Stringer study. The Spearman-Brown internal consistency reliabilities ranged from $r = .52$ to $r = .90$. The interscale correlations ranged from $r = -.54$ to $r = .60$. The authors concluded that the correlations were moderate, and that the scales had good scale independence.

This research of Schneider and Bartlett is also relevant to the study of intra- and interlevel reliabilities of organizational climate. Two questions are central: To what extent do employees at a given hierarchical level agree on the evaluation of organizational climate? and To what extent do employees at different hierarchical levels agree on the evaluation of organizational climate? The first question is one of intralevel reliability; the second is a question of interlevel reliability. A third question is: To what extent do employees in different organizational units at the same hierarchical level agree on the evaluation of organizational climate? This becomes a question of climate interreliabilities between equi-hierarchical units, or of agreement among people at a given level in the organizational hierarchy on their perceptions of organizational climate. Schneider and Bartlett (1970) studied the extent to which employees in the same environment perceive the environment or climate in the same way. At the life insurance "agent"-level, they found the interagent reliabilities to be rather low (in average, .20 for each dimension), indicating that no close agreement existed among the agents' ratings of organizational climate. However, the number of agents in some organizational units was as low as five.

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The estimate of intra-agency conflict was $r = .17$ with five raters. The Spearman-Brown estimate of reliability of the sum of the five ratings would be .50. To bring the estimate to .80 would require summing across 20 agents. The authors concluded that these data indicated potential usefulness and that the criterion of convergent validity had been met. At the managerial level, the manager-manager reliabilities were low, ranging from $r = .03$ for managerial structure to $r = .17$ for general satisfaction. The researchers concluded that this would not meet the criteria of convergent or discriminant validity.

In the same study, Schneider and Bartlett (1970) found the interlevel reliabilities to be rather low for climate correlations between agents and managers, between agents and assistant managers, and between assistant managers and managers. Only 3 out of 108 correlations were significant at $p < .05$.

Friedlander and Margulies (1969) conducted a study of 95 employees in a research and development organization. They administered an organizational climate index adopted from Halpin and Crofts' Organizational Climate Description Questionnaire (OCDQ) (Halpin & Crofts, 1963; Halpin, 1966). The OCDQ was originally designed for school organizations, but the items were revised to be applicable to any organization (Margulies, 1965). The revised version of the OCDQ contained 64 descriptive items about eight dimensions; four dimensions described employee behavior and four described supervisor behavior. The respondent categories along each scale or dimension were from "strong disagreement" to "strong agreement." The eight defined subvariables or dimensions of organizational climate were disengagement, hindrance,

esprit, intimacy, aloofness, production emphasis, thrust, and consideration. The authors did not report any intrascale or interscale reliabilities for this measure of organizational climate.

Friedlander and Greenberg (1971) conceptualized climate as an interaction of personal factors (personality, needs, values) and organizational properties (structure, supervisory practices).

Schneider and Hall (1972) administered a climate questionnaire to Roman Catholic diocesan priests. Factor analysis yielded four factors, which they labelled (1) superior effectiveness, including "amount of guidance provided by superior" and "pastoral effectiveness of superior"; (2) work challenge and meaning, including "feeling of contentment in your work" and "feeling of confidence in your work"; (3) personal acceptance, such as "feeling of being accepted by the laity as a person"; and (4) supportive autonomy, i.e., "opportunity to express ideas" and "feeling of being treated as an equal by superior."

Pritchard and Karasick (1973) also worked out a taxonomy of organizational climate. They argued that attempts to generate taxonomies of climate seem to have resulted in a fairly small number of dimensions of climate and that more dimensions ought to be detected. They wrote,

A more vigorous attempt should be made to tap as many different dimensions of climate as possible. Common sense says that the psychological environment of an organization is tremendously complex. It is highly doubtful that six or seven dimensions can adequately tap this complexity (p. 129).

In their study, the organizational climate variable was operationalized in terms of 22 dimensions. However, because of a relatively small sample size, only 11 dimensions were used in the questionnaire

because, as the authors stated, "the limitations of sample size would undoubtedly restrict the meaningfulness of large numbers of dimensions and patterns of interactions" (p. 133). The dimensions used were autonomy, conflict versus cooperation, social relations, structure, level of rewards, performance-reward dependency, motivation to achieve, status polarization, flexibility and innovation, decision centralization, and supportiveness. The Spearman-Brown internal consistency reliability estimates ranged from $r = .66$ to $r = .85$. The scale score intercorrelations ranged mostly from $-.30$ to $.30$. Out of 55 interscale correlations, 6 were $.50$ or higher. The authors concluded that not all scales were completely independent. With the help of two judges, organizational consultants who were intimately familiar with the two organizations being investigated, the researchers also tested the construct validity of the climate measure. Only two organizations were selected for study. One was an achievement-oriented, dynamic organization; the other was a conservative, static organization. It was predicted that the former organization would be higher on the climate scales such as motivation to achieve, flexibility and innovation, and performance-reward dependency. The same organization would be lower on social relations, decision centralization, structure, and status polarization. The construct validity of the organizational climate measure was found to be satisfactory; significant mean differences in climate aspects between the two organizations were found between the judges' and employees' perceptions of climate for five out of the seven hypothesized differences.

The Likert Organizational Profile Index has been widely used and tested in U.S. companies. Likert's theory has also been tested in other countries, such as Japan (Likert, 1969), Yugoslavia (Kavicic, Rus, & Tannenbaum, 1971), and Brazil (Butterfield & Farris, 1974). In the Brazilian study, the authors administered 20 items related to the following six subvariables: leadership, motivation, communication, decision making, goal setting, and control processes. Respondents were 256 employees in 13 Brazilian development banks. Factor analysis yielded six factors, which the authors labeled leadership, resistance, guidance, informed decision making, dispersion of goal setting and control, and motivation and communication. Repeated factor analysis over time and across organizational levels did not result in a consistent factor structure.

Schneider and Snyder (1975) administered a short form of the Agency Climate Questionnaire (ACQ) to 522 respondents in 50 life insurance agencies. This measure was developed on a sample of managers from different agencies in order to reflect better interorganizational differences. This was in line with the authors' suggestion for future research--that one should select items for climate measures that lead to low response variance within an organization but high response variance across organizations. The internal consistency reliabilities for the six climate scales ranged from .63 to .80. The interscale correlations ranged from .06 to .55. In this study, the conflict scale turned out to be a rather independent scale. This is in agreement with most of the other studies referred to in this section, but is clearly

contradictory to the study of Litwin and Stringer (1968), which was discussed earlier.

Jones, James, Bruni, and Sells (1977) conducted a study of black-white differences in work environment perceptions and job satisfaction. The psychological climate questionnaire also contained items at subunit levels: immediate supervisor, work group, major subsystem. A 145-item climate questionnaire was administered to 166 black and 1,451 white sailors assigned to the same shipboard division. The climate index had been developed on an earlier sample of 4,315 sailors (Jones, James, Bruni, Hornick, & Sells, 1975). Factor analysis yielded six factors of psychological climate with eigenvalues of 1.0 or greater: (a) conflict and ambiguity; (b) job challenge, importance, and variety; (c) leadership, facilitation, and support; (d) work group cooperation, friendliness, and warmth; (e) professional and organizational esprit; and (f) job standards.

Drexler (1977) worked out a climate index based on the Survey of Organizations (Taylor & Bowers, 1972). The four climate dimensions were: human resources primacy, motivational conditions, decision-making practices, and communication flow. The separate indices were combined into a composite score because of their high interrelationship (median correlation of .77). For this composite measure, the coefficient alpha was .92 and Scott's homogeneity ratio was .74, which showed good internal consistency among the items.

Offenberg and Cernius (1978), in an idiographic study, developed a climate index called the Organizational Pattern Questionnaire (OPQ) and administered it in two different schools: an innovative private

elementary school and a traditional public elementary school. The OPQ consisted of 23 items measuring 11 variables and was given to 24 teachers/administrators in the innovative school and to 26 teachers/administrators in the traditional school. The authors used simultaneous factor analysis (Jöreskog, 1970) to detect differences in factor structure between the two types of schools. The factor analysis yielded four underlying climate factors in each of the two schools, but the factor pattern was quite different in each school. The climate index contained some unusual items, such as sex, age, and marital status. These variables are in most research work treated as demographic/sociological data. However, in this study, sex and age were found to constitute one climate factor in the traditional school with a climate interpretation:

In school Q, there was a tendency for men to be among the younger faculty, suggesting either that the school may not have provided an environment in which mature men were comfortable or that the school may have only recently become a suitable place for men to work (p. 83).

Job Satisfaction

Job Satisfaction Versus Organizational Climate, Job Characteristics, Work Morale, Job Involvement, and Work Motivation

As discussed in the previous section, job satisfaction is conceptualized as a personalistic evaluation of conditions existing on the job, or outcomes that arise as a result of having a job, whereas organizational climate is conceived as an organizational description of policies, procedures, and other events/conditions at the organizational level (Schneider & Snyder, 1975). Using the trichotomy of

organizational climate by James and Jones (1974), job satisfaction is best conceptualized within the perceptual measurement/individual attribute approach. That is, job satisfaction is seen at the individual level as the individual's own evaluative/affective perceptions of conditions existing on his/her own job.

Both job characteristics and satisfaction are measured at the individual level. The major distinction is that items of job characteristics are descriptive in nature, whereas satisfaction items are evaluative/affective in nature. Applying the trichotomy of approaches to the study of organizational climate, both job characteristics and satisfaction are subsumed by the perceptual measurement/individual attribute approach. Items of job characteristics have to be designed as individual/description oriented, whereas satisfaction items have to be designed as individual/affection oriented. An example of a job characteristic item is: "The amount of variety (doing different things) in your job." An example of a satisfaction item is: "How satisfied are you with the amount of pay you receive for your work?"

One may argue that there are always degrees of descriptive or affective statements. Even though this may be true, one can easily find statements (items) that are more descriptive than affective, and vice versa. The first item above is clearly descriptive of conditions of an individual job. The perceptions are not evaluative or affective. But the item can be made evaluative, for example, by reformulating it to: "I like that my job has a large variation in its job content." The second item above is clearly evaluative/affective because one asks about individuals' satisfaction with a job aspect. That is to say, an

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attitude is measured, and attitudes have a strong emotional/affective component. The contents of job characteristics items are strongly related to the job itself--that is, to the job content (the core job dimensions, JDS), not to the job context. The contents of job satisfaction items, on the other hand, are related to both the job content and the job context, to both intrinsic and extrinsic aspects of one's job. Even though the substantial content of job characteristics and satisfaction items may overlap to a certain degree, the main point in operationalizing these two variables is distinguishing between the descriptive items of job characteristics and the evaluative/affective items of job satisfaction.

Job satisfaction is related to work morale. The common element is that of a positive emotional state that may be experienced by employees. Viteles (1953) defined work morale as follows: "Moral is an attitude of satisfaction with, desire to continue in, and willingness to strive for the goals of a particular group or organization" (p. 284).

Compared with Schneider and Snyder's (1975) conceptualization of job satisfaction, work morale seems to be more future oriented, whereas job satisfaction is more present and past oriented. This is also in agreement with Locke (in Dunnette, 1976) when his own definition of job satisfaction is compared with Viteles' definition of morale. However, expectancy theory of job satisfaction, which will be discussed in a later paragraph, clearly indicates that job satisfaction may be conceptualized and operationalized as future oriented. Furthermore, Locke said that work morale often has a group referent, whereas job

satisfaction is an individual attribute. "One could view morale as being caused, in part, by job satisfaction, in that a person who achieves his job goals, or is making progress toward them, should feel more confident about the future than one who is not so successful" (Locke, in Dunnette, 1976, p. 1300).

Job satisfaction is also related to, but distinguishable from, job involvement. Abdel-Halim (1979) said that "job involvement is defined in terms of the importance of the work role relative to other life roles" (p. 127). An involved employee takes his work role seriously, and important values are at stake on the job. Locke argued further that a job-involved employee's moods and feelings are significantly affected by his job experience, and he is mentally preoccupied with his job. From this it follows that employees who are very much involved in their jobs are more likely to feel extremely satisfied or extremely dissatisfied with the job, depending upon the degree of success. On the other hand, employees who are very little involved in their jobs are less likely to feel extremely satisfied or dissatisfied with the same job experiences. Hence, it is possible to be strongly job involved but to feel dissatisfied.

Finally, a distinction between job satisfaction and work motivation should be made. Lawler (1973) accepted the definition of work motivation given by Jones (1955). This stated that motivation is concerned with "how behavior gets started, is energized, is sustained, is stopped, and what kind of subjective reaction is present in the organism while all this is going on" (Lawler, 1973, p. 3). Job satisfaction is an attitude that is relatively flexible and unstable as compared to

attitudes within areas such as religion, politics, or society. Satisfaction with a certain job aspect does not necessarily imply satisfaction with other aspects of the job, since each one of them depends on how well a certain need is met by that job aspect. This is the reason why, in factor analyses of satisfaction, one finds mixed factors, including both motivators and hygiene factors (Amir & Krausz, 1974). The strength of needs is measured, for example, by having individuals evaluate the "importance" of job variables. These statements of importance indicate stable and consistent work values. Some authors have taken this importance aspect as a motivational force or more stable work values, as opposed to job satisfaction or more unstable job attitudes (Kalleberg, 1977; Wexley & Yukl, 1977). Job satisfaction is particularly difficult to distinguish from intrinsic motivation. In accordance with Lawler's (1969) definition, intrinsic motivation is a driving force and an expectation of job satisfaction, whereas job satisfaction is perceived and evaluated rewards received from a certain level of job performance.

Theories of Job Satisfaction

At present there exists no comprehensive and integrated theory of job satisfaction. However, several theoretical approaches are available: Maslow's need-hierarchy theory (1954), Herzberg's two-factor theory (1959), Locke's discrepancy theory (1969), Adam's equity theory (1963), expectancy theories of job satisfaction (Mitchell, 1974; Vroom, 1964), Kalleberg's theory of job satisfaction (1977), and Landy's opponent theory of job satisfaction (1978).

The five basic categories of needs that Maslow (1954) arranged in a hierarchy have greatly influenced managerial and research thinking about job satisfaction and work motivation during the last 25 years. Herzberg's motivation-hygiene theory is also a significant basic work within the field of job satisfaction. This theory, however, has been widely criticized (House & Wigdor, 1967; King, 1970; Lawler, 1973).

The equity theory of job satisfaction (Adam, 1963) specifies the conditions under which an employee will perceive the rewards in the job to be fair and equitable. The theory is based on earlier theories of social comparison. The key concepts of the theory are input, outcome, comparison person, and equity/inequity. If the employee's outcome/input ratio is equal to that of the comparison person, the employee perceives a state of equity to exist. On the other hand, if the employee perceives this ratio to be unequal, a state of inequity is seen to exist. The larger the inequity is in disfavor of the employee, the more dissatisfaction he experiences in his job. Such inequity is accompanied by a state of dissonance, which acts as a motive to restore the equity.

Landy (1978) based his opponent process theory of job satisfaction on work done by Hoffman and Solomon (1974) and by Solomon and Corbit (1973, 1974). This theory of job satisfaction is based on a state or homeostasis of hedonic neutrality. Job satisfaction is seen as a hedonic or affective component in theories of motivation. In his theory, Landy proposed that "every excursion from hedonic neutrality is accompanied by an attempt to bring the excursion back within 'normal' limits. This return to normal levels is accomplished via an opponent

process" (p. 533). The opponent theory of job satisfaction has two stages or processes: the primary process, which is excitatory, and the opponent process, which is inhibitory. Furthermore, the theory contains five major postulates related to hedonic change. The opponent theory has some commonality with content theories of job satisfaction. Landy summarized:

Opponent process theory represents the most well-developed deductive research currently available. As such, it might be efficiently interlocked with current content theories of job satisfaction to yield a more reasonable decomposition of the satisfaction phenomenon (p. 536).

The discrepancy theory of job satisfaction is discussed next because of its relevancy to the present research. One of the operationalizations of job satisfaction is done in accordance with the discrepancy theory of satisfaction. In addition, a few pertinent points related to the important expectancy theory are indicated.

Discrepancy theory of job satisfaction.--Job satisfaction can be interpreted in terms of discrepancy theory. Locke (1969) was one of the creators of this type of theory, which is based on the discrepancy between the rewards an employee receives and what he desires. The desired amount of a job characteristic or a job environmental factor is defined as the minimum amount necessary to fulfill the individual's current needs. Three major categories of results can be obtained:

1. Actual conditions are less than the desired ones: the employee is dissatisfied.
2. No discrepancy between desired and actual conditions: the employee is satisfied.

3. Actual conditions are better than the minimum acceptable amount: the employee is still more satisfied.

Locke (1969) defined job satisfaction in terms of emotional states and job values:

Job satisfaction is the pleasurable emotional state resulting from the appraisal of one's job as achieving or facilitating the achievement of one's job values. Job dissatisfaction is the unpleasurable emotional state resulting from the appraisal of one's job as frustrating or blocking the attainment of one's job values or as entailing disvalues (p. 316).

According to Locke and in concert with the definition, job satisfaction is an attitude with a strong emotional component. Emotions, hence job satisfaction, are value judgments (appraisal); that is, they are evaluative/affective. An emotion is a value response, but not all judgments result in emotions. Furthermore, it is the achievement of one's work values that leads to job satisfaction or a pleasurable emotional state.

According to Locke, job satisfaction is a function of the perceived relationship (discrepancy) between what one wants from his/her job and what one perceives it as offering or entailing. There are three elements in this evaluative/affective process: the perception of job aspects or characteristics, an implicit or explicit value standard, and an evaluation of the discrepancy between one's perception of the existing amount of a job aspect (reward, characteristic) and one's work values. Judgments of work values are estimates of the significance of perceived facts against an individual's value standards. According to these theoretical considerations, Locke presented a conclusive statement about the issue of causality:

The causes of job satisfaction are not in the job nor solely in man, but lie in the relationship between them. The prediction of job satisfaction necessarily requires an interactive approach--not because 20 or 30 correlational studies have "proved" it, but because of the nature of man and of the evaluation process (p. 319).

This interaction between person and environment is not new, but has been discussed by many satisfaction theorists (Likert, 1961; Roethlisberger & Dickson, 1939). Job satisfaction as a consequence of the discrepancy between percepts and value standards has been discussed by many authors (Katzell, 1964; Kendall & Hulin, 1969; Morse, 1953; Vroom, 1964). As will be discussed later, Kalleberg (1977) also based his job satisfaction theory on an interaction between job rewards (percepts) and work values. Two other concepts that are often used synonymously with value are those of expectation and need (Locke, 1969). However, Locke said that using the discrepancy between what is perceived and what is expected is based on a failure to distinguish between cognitive and evaluative concepts. He stated that values rather than expectations determine satisfaction. His theory is a value-percept discrepancy model. Expectancy theories use the concept of expectation, whereas Locke's discrepancy theory and Kalleberg's theory use the concept of value.

Another variation of the discrepancy theory was proposed by Porter and Lawler (1968), who defined job satisfaction in the following way: "Job satisfaction is the extent to which the rewards actually received meet or exceed the perceived equitable level of rewards" (p. 30).

Porter defined job satisfaction operationally as the difference between how much of something (rewards) there "should be" and how much there "is now." This conception is basically similar to Locke's discrepancy model, but Porter's "should be" implies more emphasis on equity considerations and less on needs as the determinant of preferred amount of rewards. A problem with both Locke's and Porter's procedures is that such discrepancy scores do not reflect the importance of job aspects.

Kalleberg's (1977) theory of job satisfaction is basically also a discrepancy theory. This theory incorporates differences in work values and perceived job characteristics as key explanatory variables. Kalleberg defined job satisfaction as "an overall affective orientation on the part of individuals toward work roles which they are presently occupying" (p. 126). This definition implies that job satisfaction is a unitary concept and that individuals may be characterized by some sort of vaguely defined attitude toward their total job situation. In accordance with this conceptualization, Kalleberg operationalized job satisfaction by designing items concerning how satisfied employees are with their jobs as a whole. Kalleberg derived information about work values by measuring the importance of job characteristics. Through factor analysis he arrived at six differentially valued dimensions of work. Importance or valuation of job aspects is equivalent to more stable and consistent work values, according to Kalleberg. He argued that work values reflect the individual's awareness of the condition he seeks from the work situation, and they regulate his actions in pursuit of that condition. Therefore, work values

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refer to general attitudes regarding the meaning an individual attaches to the work role as distinguished from his satisfaction with that role. Kalleberg further distinguished work values from expectations, which denote "one's beliefs about what will occur in the future." He also distinguished between work values and needs. Needs "refer to the objective requirements of an organism's well-being. A value presupposes an awareness, at some level, of the object or condition sought while a need does not." The concepts of work values and needs are closely related, since it is highly probable that employees may value those job aspects that satisfy their actual needs. However, values may be irrational, and it is an individual's values that direct his actions and determine his emotional responses, regardless of the degree to which his values correspond to his needs. Job satisfaction is understood, not only in terms of work values, but also in terms of available rewards associated with each of the six dimensions of work. These job rewards are evaluative judgments of job features; they do not represent objective properties of jobs. Kalleberg factor analyzed these perceived properties of jobs and work values measured as the importance of each job dimension. He found that the perceived reward and the work value scales represented independent constructs. Kalleberg further found that rewards and job satisfaction showed a rather high positive correlation. Work values and job satisfaction showed a smaller but statistically significant ($p < .001$) negative correlation. For a given level of rewards, the more the employee values those rewards the more likely it is that these values are not fulfilled, hence a negative correlation.

One may argue that a model in which work values interact with rewards is more appropriate. Kalleberg discussed such an interaction model in which the effects of job rewards on job satisfaction depend on the levels of work values for these rewards. The author stated, however, that such an interaction is already included in the first model. This is true because the actual responses to reward items "are quite possibly the product of the 'true' scores on these questions and the extent to which the respondent values the reward in question" (p. 135). Therefore, the job-reward measures already represent the interactions between the true job reward scores and work values.

Satisfaction (and dissatisfaction) reflects a dual value judgment: the degree of value-percept discrepancy and the relative importance of the value to the individual. Locke (1969) argued that attributes of values, content, and intensity are involved in determining emotional reactions and must be considered when explaining such reactions. Later researchers have weighted the satisfaction scores with the respective importance scores. Mikes and Hulin (1968) concluded their research by saying that "importance"-weighting has little value in a prediction situation involving job attitudes and behavior. They stated further that "there is no need to use importance and an integrative model to link satisfaction with the different aspects of the job to the behavioral responses to the job since the simpler model assuming unit weights is more parsimonious and is at least as valid" (p. 397). Kalleberg (1977) arrived at a similar conclusion in his regression-analysis model. The point in Kalleberg's model is that he measured levels of work values as "importance"-ratings. Both Kalleberg and

Locke seemed to agree that importance is already included in and reflected by the satisfaction ratings. In a conclusive statement, Locke argued: "Since value importance determines the degree of affect produced by a given amount of value-percept discrepancy, multiplying satisfaction scores by importance scores is redundant" (p. 331). Blood (1971) and Wanous and Lawler (1972) reached similar conclusions about the value of "importance"-weighting.

Expectancy theory of job satisfaction.--Expectancy theories have been developed primarily to explain work motivation. Vroom (1964) made the first explicit theoretical formulations of expectancy theory applied to organizational behavior. However, later research has also been done to explain job satisfaction within an expectancy frame of reference (Mitchell, 1974). Mitchell presented a valence model, a motivational force model, and an effort model. Unlike the last two models, the valence model does not contain an expectancy factor. This model states that the valence of an outcome to an employee is a monotonous, increasing function of the algebraic sum of the products of the valences of all other outcomes and the person's conceptions of the specific outcome's instrumentality for the attainment of these other outcomes. Vroom (1964) defined cognized or perceived instrumentality as the degree to which a person sees the outcome in question as leading to the attainment of other outcomes. This model has been applied to prediction of job satisfaction; the model then says that the employee's level of job satisfaction (JS) results from the instrumentality (I) of the job for attaining other outcomes and the valence (V) of those outcomes:

$$JS = \sum_{\text{facets}} VI$$

An employee's job satisfaction is considered to be a function of the degree to which the job is instrumental for value outcomes. The product of the instrumentality of each outcome and the valence (value, importance) of that outcome are summed over all job facets to result in a certain level of job satisfaction. Several researchers have measured job satisfaction as the product of valence and instrumentality (Constantinople, 1967; Graen, 1969; Mitchell & Albright, 1972; Wanous & Lawler, 1972).

Vroom (1964) suggested that the instrumentality variable may vary from +1.00 to -1.00, minus one meaning that the outcome in question is perceived as never leading to the attainment of the second outcome. Few researchers have treated the instrumentality variable in the manner Vroom suggested. The instrumentality variable is usually measured with a Likert scale, with positive scale values only. Different ways of operationalizing the I-variable will be discussed in the next section, leading to a certain overlap between the expectancy and discrepancy theories of job satisfaction.

The valence variable has been operationalized in different ways. Some authors have used important-unimportant scales (Constantinople, 1967; Mitchell & Albright, 1972; Wanous, 1972). Others have used attractive-unattractive or desirable-undesirable scales (Dachler & Mobley, 1973; Lawler & Suttle, 1973; Turney, 1974). The way Vroom (1964) defined anticipated satisfaction seems to correspond better to the attraction dimension than to the importance dimension. This

"anticipation" aspect of job satisfaction lies within the expectancy approach to job satisfaction. Vroom suggested that the term "valence" should be used to describe an affective orientation toward anticipated outcomes. Graen (1969) preferred to use the term "attraction" instead of valence. Therefore, the term "satisfaction" applies mainly to outcomes already possessed or experienced by an employee, whereas valence and attraction apply to future outcomes (expectancy theory). The question is whether the job experience has already happened (satisfaction) or whether it is anticipated (attraction). Wanous and Lawler (1972) said that job satisfaction is primarily a "hedonism of the past," whereas attraction or valence is primarily a "hedonism of the future." No analyses seem to have been conducted that examined these two strategies separately. However, Wanous and Lawler (1972) suggested that future research should ask employees what they expect to happen in the future regarding various job facets. They argued that Porter's "Should Be-Is Now" measures job satisfaction, whereas the formula "Should Be-Expect" measures job attraction. Operationalization of job satisfaction is the topic of the next section.

Different Ways of Operationalizing Job Satisfaction

Wanous and Lawler (1972) described various operationalizations of job satisfaction. Besides simple satisfaction ratings, several newer measures of job satisfaction have been developed. However, it is not clear whether the newer operationalizations measure the same thing as simple ratings of job satisfaction. Hence it becomes very relevant to investigate the question of construct validity.

First of all, there is a distinction between job facet satisfaction (JFS) and overall job satisfaction (JS). The first term means satisfaction with various job aspects of job characteristics, both in terms of job content and job context. Overall job satisfaction has been thought of in two major ways: as the composite measure by summing over all job facets, or operationalized in terms of items related to the whole job, not to parts or facets of the job. Such items may be: "Generally speaking, to which degree are you satisfied with your job?" or "To which degree are you bored on the job?"

Ewen (1967) considered overall job satisfaction as the summed satisfaction scores from the five components of the Job Description Index (JDI):

$$JS = \sum_{\text{facets}} (JFS) \quad (1)$$

The author correlated the JFS sums with two measures of overall job satisfaction obtained from the General Motors Faces scale (Kunin, 1955) and the Brayfield-Rothe scale (Brayfield & Rothe, 1951). The correlations ranged from $r = .50$ to $r = .74$ for three separate samples.

Job satisfaction has also been operationalized as a weighted sum of job facet satisfaction to take individual differences into account. Employees value various job facets differently; therefore, ratings of importance of job facets are used to weight the facet satisfaction before summing them over all job facets.

$$JS = \sum_{\text{facets}} (\text{Importance} \times JFS) \quad (2)$$

Kalleberg (1977) used the term "work value" in conceptualizing his theory of job satisfaction, but he used the term "important" in operationalizing this variable: "We'd like to know how important each of these is to you." Related to the previously discussed valence model, this value or importance variable represents the V-variable in the valence formula applied to job satisfaction ($JS = \sum VI$)

Porter (1961) operationalized job satisfaction as goal attainment or fulfillment. The item structure "How much is there now" of each job facet is taken as a measure of job satisfaction when summed across all job facets. The formula for this type of operationalization becomes:

$$JS = \sum^{\text{facets}} (Is \text{ Now}) \quad (3)$$

Alderfer (1969) used essentially the same approach as Porter, even though he did not explicitly use the term "is now."

In his valence model, Vroom (1964) used the term "valence" for a job outcome that basically corresponds to the term "importance of a job facet." Furthermore, his concept of "instrumentality" corresponds to Porter's concept "is now." The next formula, therefore, becomes:

$$JS = \sum^{\text{facets}} (\text{Importance} \times Is \text{ Now}) \quad (4)$$

The operationalization most clearly in concert with the discrepancy theory is:

$$JS = \sum^{\text{facets}} (\text{Should Be} - Is \text{ Now}) \quad (5)$$

Porter (1961) defined job satisfaction as the discrepancy between perceived equitable rewards (Should Be) and actual rewards (Is Now).

Importance weighting can be used for Formula 5, and a sixth operationalization formula results:

$$JS = \sum^{\text{facets}} \text{Importance} \times (\text{Should Be} - \text{Is Now}) \quad (6)$$

Another operationalization of job satisfaction is simply the difference between "Importance" rating and "Is Now" Rating:

$$JS = \sum^{\text{facets}} (\text{Importance} - \text{Is Now}) \quad (7)$$

Evans (1969), however, has argued that this definition is theoretically meaningless, in spite of the fact that several researchers have used it (Beer, 1966; Kuhlen, 1963; Pelz & Andrews, 1966). It is doubtful that a $7 - 7 = 0$ discrepancy shows the same level of job satisfaction as a $1 - 1 = 0$ discrepancy. Wanous and Lawler (1972) argued that the latter situation may be much more dissatisfying to an employee than the former.

These different operational definitions of job satisfaction imply different meanings of what it is to be satisfied. Equations 3 and 4 imply an equity notion of satisfaction, whereas Equations 5 and 6 are clearly discrepancy measures of job satisfaction. Furthermore, Equations 2, 4, and 6 are multiplicative, and Equations 1, 3, 5, and 7 are additive models of job satisfaction.

Wanous and Lawler (1972) empirically investigated nine operationalizations of job satisfaction. They correlated JS according to

Equation 1 with the other eight satisfaction measures. The highest correlations were with "Importance x Facet satisfaction" and with "Is Now": $r = .92$ and $r = .82$, respectively. The authors also correlated a single overall (general) job satisfaction item response with all the other nine measures. The highest correlations were with "Is Now" and "Mean of facet satisfaction": $r = .61$ and $r = .60$, respectively. The authors presented two explanations of why these nine correlations were lower than the eight correlations mentioned above. First, a single item measure of overall job satisfaction is less reliable than a composite measure. Second, the single global satisfaction item was placed in a different section of the questionnaire. Therefore, "it probably shares less common method variance, resulting in lower correlations" (p. 99).

Wanous and Lawler concluded from the matrix for convergent and discriminant validity that it is possible to measure job satisfaction validly from a job facet point of view. Within the job facet approach, however, the authors concluded that there is no one best way to measure job satisfaction. The "best" satisfaction measure may depend on what independent or dependent variable is related to the satisfaction variable.

Basic Dimensions of Job Satisfaction

Researchers on job satisfaction have to a great extent followed the lead of Hoppock (1935) in using direct verbal self-reports to measure job satisfaction. The scales used are Thurstone scales, Likert scales, "faces" scales, and lists of adjectives to which respondents answer "yes," "no," or "?".

The most common index of job satisfaction is the Job Description Index (JDI) developed by Smith, Kendall, and Hulin (1969). This index contains five scales of job satisfaction aspects: work, pay, promotions, co-workers, and supervision. Each scale contains eight or nine items. Another frequently used index is the Minnesota Satisfaction Questionnaire (MSQ) by Weiss, Dawis, England, and Lofquist (1967). The original MSQ had 100 items in the long form of the index and 20 in the short form. The long form has been extended by adding more than 10 scales to the original 20 scales.¹ The last MSQ this researcher received from Professor Dawis² contained 38 scales and 259 items. A third index is the Need Satisfaction Questionnaire (NSQ) developed by Porter (1961) and based on a discrepancy theory of job satisfaction. The NSQ also contains a rating of importance of each job aspect, which provides a measure of need strength as opposed to need satisfaction.

According to Locke (in Dunnette, 1976), the typical job satisfaction measures that have been studied by previous investigators include the following:

Work: including intrinsic interest, variety, opportunity for learning, difficulty, amount, chances for success, control over pace and methods, etc.

Pay: including amount, fairness or equity, method of payment, etc.

Promotion: including opportunities for, fairness of, basis for, etc.

Recognition: including praise for accomplishment, credit for work done, criticism, etc.

¹Letter from Professor Dawis to writer, October 10, 1977.

²MSQ received from Professor Dawis.

Benefits: such as pension, medical, annual leave, paid vacations, etc.

Working Conditions: such as hours, rest pauses, equipment, temperature, ventilation, humidity, location, physical layout, etc.

Supervision: including supervisory style and influence; technical, human relations, and administrative skill, etc.

Co-workers: including competence, helpfulness, friendliness, etc.

Company and Management: including concern for the employees as well as pay and benefit policies (p. 1300).

The first six job aspects deal with "events or conditions" on the job, whereas the last three deal with "agents." In most research these two dimensions are treated separately. Locke (1969) said that a more logical procedure would be to study them separately as well as analyzing the interaction between them.

Locke mentioned another problem common to all self-description inventories: the assumption of a perfect or satisfactory level of self-insight in evaluating job satisfaction. This includes both the capacity and the willingness to introspect. Finally, the assumption of a common core of meaning across individuals in interpreting the scales or items constitutes a problem in measuring job satisfaction.

Job Performance

Theoretical Approaches

No comprehensive theory of job performance has yet been developed. One necessarily has to discuss determinants and effects of job performance, and several separated or fragmented theories of such causal relationships exist.

Efforts to develop theories of job performance include works by Maslow (1954), Herzberg, Mausner, and Snyderman (1959), McGregor

(1960), Argyris (1964), and Likert (1967), all of whom emphasized a self-actualization theory of work. McClelland's (1961) research on the need for achievement was also a valuable contribution to a theory of work behavior. The theories of Porter and Lawler (1968), Dawis, England, and Lofquist (1968), and Korman (1970) are briefly discussed below. The attribution theory of Staw (1975) is discussed in connection with presentation of the total model of variables.

Job performance is a work behavior variable or an outcome variable. In their basic work about managerial attitudes and performance, Porter and Lawler (1968) stated that "performance refers to a person's accomplishment on tasks that comprise his job. Performance, in essence, is the net effect of a person's effort as modified by his abilities and traits and by his role perceptions" (p. 28). This description is closely related to the Porter and Lawler theoretical model of job performance/job satisfaction. Not only an employee's effort, but also his/her abilities, traits, and role perceptions, codetermine the level of job performance or accomplishment of tasks. Job performance is that aspect of an employee's behavior that organizations are most interested in measuring and influencing because it is related to both productivity and organizational effectiveness. As such, job performance is associated only with organizationally relevant tasks and goals. An employee can usually contribute to organizational goals in many ways. Therefore, there are many potential aspects of an employee's work behavior that the organization can consider in appraising job performance. For example, an employee may be able to develop and maintain very friendly relations with his colleagues. Porter and

Lawler (1968) argued that such behavior may or may not be considered part of his job performance. It all depends on the nature of the job. If the job requires a great deal of interreaction with other employees, friendly relations with fellow employees would be considered an aspect of high job performance. If, however, very little or no interaction is required to perform the job, friendly relations are considered less important to individual job performance.

In the work adjustment theory of Dawis et al. (1968), work adjustment is seen as a function of job performance (satisfactoriness) and job satisfaction. Performance or satisfactoriness refers to the organization's evaluation of the behavior of its employees, measured in terms of stated organizational goals. The level of job performance is a function of the correspondence between the abilities of the employee and the requirements of the job. Schwab and Cummings (1970) argued that this theory of work adjustment implies that the major determinant of job performance is the structural fit between the employee's abilities and skills. This is in line with Porter and Lawler's model, which includes both abilities/traits and role perceptions as determinants of job performance.

Korman (1970) set forth the following hypothesis of work behavior: "All other things being equal, individuals will engage in and find satisfying those behavioral roles which will maximize their sense of cognitive balance or consistency" (p. 32). He said that his hypothesis of work behavior is a member of the family of motivational and social psychological theories known as theories of "balance" (Heider, 1958), "dissonance" (Festinger, 1957), and "status congruency"

(Sampson, 1963). Korman derived two additional statements from his work hypothesis: (1) Individuals will be motivated to perform on a task or a job in a manner that is consistent with the self-image with which they approach the task or job situation, and (2) Individuals will tend to choose and find most satisfying those job and task roles that are consistent with their self-cognitions. In the research literature, Korman found three broad determinants of job performance: chronic self-competence, task-specific self-competence, and organizational and interpersonal expectations. The last determinant is interesting in this connection because organizational climate is its major component. In line with McGregor (1960), Argyris (1964), and Likert (1967), Korman predicted that the motivation to perform, hence performance, "should be a function of the extent to which the organization provides an ego-enhancing atmosphere, as opposed to one that is debilitating." Such an organizational climate would be reflected in work behaviors; for example, in degree of self-control exerted, degree of decision-making responsibility over one's job, tendency to use influence procedures based on internalization of new attitude rather than forced compliance, and extent to which the organization has ego-enhancing training and development policies. Korman asserted that his hypothesis of work behavior may be able to explain why traditional "incentive" theory accounts for only a small amount of the variance in work behavior.

Operationalization of Job Performance

Ratings of job performance are usually done by superiors or by peers. Self-rating of performance is often done for comparison purposes.

Many studies have shown reasonably good agreement between superior and peer ratings of job performance (Lawler, 1968; Lawler & Porter, 1967; Schuler, 1975; Slocum, 1970). Reported correlations were $r = .56$ (Lawler), $r = .73$ (Slocum), and $r = .58$ (Schuler). Thus, superiors' and peers' rankings seemed to meet the requirement of convergent and discriminant validity fairly well. Self-rating of job performance, however, did not correlate very strongly with the other two forms of rating. Lawler (1968) reported a correlation of $r = .26$ between self-rating and peers' rating, and $r = .09$ between self-rating and superiors' rating. He concluded that self-ratings did not show convergent and discriminant validity.

Several factors or components of job performance have been used as submeasures of job performance. Seashore, Indik, and Georgopoulos (1960) used five factors of job performance: overall effectiveness (overall quality), productivity (quantity), chargeable accidents, unexcused absences, and errors. Vroom (1962) used a 10-factor performance review scale; the factors were quality of work, quantity of work, dependability, knowledge of job, judgment and common sense, personality, ability to learn, initiative, cooperation, and industry and application. Lawler and Porter (1967) used two factors: how hard the manager worked and how well the manager performed his job. However, the first factor in their model measured effort. Only the second factor was taken as a measure of job performance. Slocum (1970) used a multitrait performance scale with the following factors: technical knowledge, functional knowledge, drive/aggressiveness, reliability, cooperation, and organizing ability. Schuler (1975) used overall job performance as the

single performance measure. Such an overall measure has been found to yield results similar to those of a more extensive checklist form (Lawler, 1967). Ekpo-Ufot (1979) used seven job traits--dependability, proficiency, ease in learning, job knowledge, industry, sociability, and initiative--as a composite measure of performance.

Several personality traits and qualities have been used as operational aspects of job performance, as the above-mentioned performance scales demonstrate. The most common elements of the scales seem to be most directly related to the performance level as such. These are, first of all, quality and quantity of work. Furthermore, overall job performance seems to be a valid measure (Lawler, 1967).

A behavioral measure that seems promising in finding a valid and reliable performance measure is the Behavioral Observation Scales (BOS) (Latham & Wexley, 1977; Latham, Fay, & Saari, 1979). The BOS is similar to a Likert method in that (1) a large number of incidents/statements related to the object in question are collected, (2) a group of individuals is observed and rated on a five-point scale with regard to the frequency with which they engage in the behavior described by each incident/statement, (3) a total score for each individual is determined by summing the observer's responses to all the behavioral items, and (4) an item analysis (or factor analysis, depending on the size of the sample) is conducted to select the most discriminating items. The items with the highest correlations with the total score are retained to form a behavioral criterion. The BOS has to be validated in the cultural setting in which it is supposed to be applied.

Latham, Fay, and Saari (1979) found the BOS that is in use today to have good content and concurrent validity as well as reliability.

Errors in Ratings of Job Performance

Performance ratings in general are subjected to rater errors, such as the halo effect, leniency, and restriction of range. These errors and the general lack of discriminant validity in a multitrait-multirater analysis (Kavanogh, MacKinney, & Wolins, 1971; Lawler, 1967) indicate that difficulties exist in obtaining accurate performance ratings. Berman (1978) classified the causes of these rating problems into four general categories. First is the rater's ability to observe relevant ratee behavior. Often the raters lack an opportunity to observe all job behavior that is relevant to an employee's job performance. Second, the rater's knowledge of rating errors and his/her experience in making performance evaluations are essential in high-quality ratings. Raters need to be trained in avoiding various rating errors (e.g., halo, leniency). Third, it is difficult to translate observed work behavior into pre-established performance scales. Benchmarks on the scales relevant to the ratees and understanding the meanings of scales are essential prerequisites in high-quality performance ratings. The fourth problem is organizational constraints on raters, such as the general tendency for raters to provide high ratings when they must meet with the ratee later to discuss the ratings. In such situations, the raters' most accurate estimates of ratees' true performance are not provided. These four rating problems may be reduced by careful selection of raters, rater training, and development of a validated BOS.

Relationships Among the Key Variables

The Cause-Effect Problem

The Scottish philosopher, David Hume, denied that one could observe any necessary causal connections between events. He concluded that the "law of causality" was unprovable and that true causal explanation was impossible. A present view on the cause-effect problem is that of Skinner (1953), who argued: "The old cause-and-effect connection becomes a functional relation. The new terms do not suggest how a cause causes its effect; they merely assert that different events tend to occur together in a certain order" (p. 23). This new research philosophy has been termed "correlation without explanation." In much of the satisfaction-performance research, an investigator observed sequences of actions without bothering to identify the idiosyncrasies of the entities that made these actions possible. Very often, correlations have been taken as the end point of the research rather than the starting point. Most research on "moderator" variables has been "correlation without explanation." Locke (1969) argued that under this philosophy, genuine understanding and valid scientific generalization are impossible. If a researcher cannot identify characteristics of the entities, he is not in a position to state why a cause brings about its effect, and hence is not able to demonstrate that it is a cause rather than a mere correlate. And if the researcher cannot identify the causes of a phenomenon, he cannot predict with certainty when it will occur in the future.

Nearly all the studies of the relationships among job characteristics, organizational climate, job satisfaction, and job performance

have been correlational or theoretical studies. Very few investigations have dealt with causal relations. A correlation, by itself, explains nothing. Neither can correlations based on the cross-lagged technique (Lawler, 1968; Wanous, 1974) provide a full explanation of the cause-effect relationship. Locke (1976) stated: "Even the cross-lagged correlation technique, while it helps clarify temporal relationships, does not show how the alleged cause causes its effect, as would be required of any full causal explanation. . . . Nor does this technique rule out other explanations" (p. 1338). However, correlational analyses may be useful for the purpose of suggesting causal hypotheses. Correlations are starting points in the research process. For example, to explain a correlation between some external situation and individual action, some of the causal mechanisms involved (needs, values, expectancies) must be identified. Porter and Lawler (1968) stated that "the important single research need for the future, in connection with the model, is to collect data that will provide evidence on the direction of causality" (p. 167). The authors mentioned field studies as one approach to the causality problem, but at the same time pointed out the difficulties involved in controlling extraneous variables. They also mentioned longitudinal studies as a second approach, which would enable the researcher to compute cross-lagged correlations. The third approach that Porter and Lawler cited was laboratory experiments, but they pointed out the difficulty in generalizing the results to the field situation.

The Relationship Between Job Satisfaction and Job Performance

Numerous studies have been conducted on the relationship between satisfaction and performance. The relationship between them is low, usually less than .40 in most studies (Locke, 1976), and at present the causal relationship is not clear.

Siegel and Bowen (1971) discussed three designs that have been used to measure directional causality in the performance-satisfaction relationship. Satisfaction and performance can be measured at the same moment, abbreviated ($\begin{smallmatrix} P \\ S \end{smallmatrix}$). Most correlational field studies as well as laboratory studies have used this paradigm. Second, satisfaction may be measured before subsequent performance (S -- P). The Michigan Survey Research Center has addressed this question, but there is not much empirical evidence that such a single causal direction exists. Some investigations, however, have shown that extrinsic satisfaction affects job performance (Wanous, 1974). Third, job satisfaction may be measured after job performance (P -- S). The first design, ($\begin{smallmatrix} P \\ S \end{smallmatrix}$), is a static design that provides ambiguous evidence to support either causal direction. However, statistical techniques such as path analysis have been used to find the overall causal direction in the total variable structure (Billings & Wroten, 1978). The second and third designs are dynamic designs that offer a better possibility of studying the question of causality.

Longitudinal laboratory studies by Thorndike (1917) and Poffenberger (1928) did show that job performance could remain constant or even improve while job dissatisfaction or feelings of fatigue were

increasing. Exponents of the Scientific Management movement argued that high job performance led to high job satisfaction, whereas exponents of the Human Relations movement in the 1930s argued that high job satisfaction led to high job performance. However, the extensive Hawthorne research did not show that satisfaction was the cause of job performance. These studies did show that certain changes in the work environment improved both performance and morale among employees (Roethlisberger & Dickson, 1939). In an early post-war survey of the performance/satisfaction literature, Brayfield and Crockett (1955) concluded that

satisfaction with one's position in a network of relationships need not imply strong motivation to outstanding performance within the system, and second, that productivity may be only peripherally related to many of the goals toward which the industrial worker is striving (p. 421).

Later basic research has also found a negligible relationship between job performance and job satisfaction (Herzberg et al., 1957; Vroom, 1964). Vroom reviewed a number of studies and found a median correlation of +.14 between job satisfaction and performance.

According to the fundamental model of Porter and Lawler (1968), job performance causes job satisfaction rather than the other way around. Many investigators have conducted research that supported Porter and Lawler's causal model (Cherrington et al., 1971; Farris & Lim, 1969; Ford, 1969; Green, 1973; Koppelman, 1975; Locke, 1970; Siegel & Bowen, 1971; Staw, 1975). Other studies have failed to find evidence supporting Porter and Lawler's causal relationship between job performance and satisfaction (Kesselman et al., 1974; Lawler, 1968; Pritchard, 1973; Sheridan & Slocum, 1975; Wanous, 1974; Wood, 1974).

To understand the relationship between performance and satisfaction, one must study the conditions under which high job performance would lead to high job satisfaction, and the conditions under which high satisfaction would lead to high performance. Locke (1976) gave two conditions under which high performance would lead to high satisfaction: (1) when high job performance leads to the attainment of the employees' job values, such as task values (success, achievement) and rewards (promotion, recognition, pay increase); and (2) when such performance was not attained at such a high cost as to undermine the pleasure of attainment (e.g., fatigue) or to negate other values (e.g., family relationships). The author also stated that in more complex conditions, under which high job satisfaction would lead to a high performance level, questions like the following need to be answered:

1. On what was the individual's past satisfaction based? If past satisfaction developed as a result of a high performance level, one would expect the same behavior (high performance) to be repeated. But if high job satisfaction was experienced in spite of (or because of) low job performance, one would not expect high performance in the next time sequence. High satisfaction level could be a result of high pay and good supervision, neither of which was contingent on good performance. Also, in this case there is no reason to expect higher job performance than in the past.

2. What types of actions does the individual anticipate will bring him value attainment and therefore pleasure in the future? Employees do not behave blindly according to what has brought them

success in the past. But they do behave according to anticipation of future conditions.

3. Which behavior alternative will the employee choose in response to satisfaction or dissatisfaction? Locke (1970) classified behavior alternatives according to positive emotions (satisfaction) and negative emotions (dissatisfaction). Positive appraisals were: approach object, retain object, repeat act, switch activities, set new goal, choose new task, pursue new endeavor. Negative appraisals were: avoid object; leave situation; change object, such as physical attack, destroy, damage, injure, persuade, complain, argue, convince, criticize, persecute, bargain; change own actions or performance; change reaction to object, such as modifying content or hierarchy of own values, modifying estimate of relationship between situation or object and one's values, using ego-defense mechanisms, or tolerating situation.

4. On the basis of the foregoing considerations, what explicit or implicit performance goals does the individual set?

5. Does the individual have the knowledge and ability to attain a high level of performance, assuming that he tries to do so?

Studies have shown a stronger relationship between performance and intrinsic factors of job satisfaction than between performance and extrinsic factors of satisfaction (Lawler & Porter, 1967; Wanous, 1974). Wanous found also that performance causes intrinsic satisfaction and that extrinsic satisfaction causes performance, even though he, as stated earlier, held the theoretical position that performance is a stronger cause of satisfaction than the reverse. This means, in reality, that employees with higher-order needs primarily derive job satisfaction

from their performance, and that the causal direction may be opposite for employees possessing predominantly lower-order needs. This is in accordance with Korman's (1970) hypothesis that job performance predicts job satisfaction for individuals with high levels of self-esteem.

Sutcliffe (1971) developed the "cycle concept" of the performance/satisfaction relationship. A series of performance/reward cycles exists at work. One cycle ends when the employee receives his/her rewards, whether these are intrinsic, extrinsic, or both. Sutcliffe theorized that effort and performance affect the level of job satisfaction and that job satisfaction, by its influence on the level of aspiration, affects subsequent effort and performance; hence, a circular relationship operates.

At present, the model of Porter and Lawler seems to be one of the most forceful models--probably the most forceful model--as regards interpretation of the satisfaction/performance relationship. The model includes the possibility of a reciprocal relationship between these two latent traits, even though the authors argued that in Western cultures with strong higher-order needs in the work force, the strongest causal direction is from job performance to satisfaction. First of all, it should be emphasized that, in general, there need not necessarily be a relationship between job satisfaction and performance. Nevertheless, many studies have shown a positive relationship between these two variables that needs interpretation. Some studies have shown a nonrelationship, and even a negative relationship may exist, both of which need to be interpreted. Second, it should also be emphasized that for an organization to develop or establish a strong positive relationship

between satisfaction and performance is not a goal in itself. This is true because an increase in performance, satisfaction, or both does not necessarily need to result in a stronger relationship between them. What happens in any given case depends on conditions and moderators underlying the satisfaction/performance relationship, as just described in connection with Locke (1976) or as described by other authors (Lawler & Porter, 1967; Wexley & Yukl, 1977). The key concept or moderator in the Porter and Lawler model is "rewards" in all their forms. Job content (job characteristics) and job context (many aspects of organizational climate) are broad reward variables. An enriched job--that is, a job with a high amount of job content (core dimensions of the job [Hackman & Oldham, 1975])--has intrinsic rewards that can satisfy employees' higher-order needs: needs for achievement, recognition, personal growth, self-esteem, and self-actualization. The job context includes such aspects as the leadership quality of one's superior, communication climate, conflict resolution climate, and reward policy. These and other aspects of the organizational culture have a rewarding effect in the work situation if they are developed or are present to the necessary degree. To the reward system belong also pay and promotion, which in most organizations are contingent on performance. Other reward factors, such as reliability, ability to cooperate, and creativity, are all linked to recognition as a reward and in many cases also to the possibility of promotion, which leads to further rewards of an intrinsic and/or extrinsic nature.

The reasoning behind why a positive satisfaction/performance relationship may exist is the following, according to the Porter and

Lawler model: Within limits, the organization can make extrinsic rewards contingent on job performance. Assuming that these extrinsic rewards are realistic and equitable, employees with superior performance will experience higher satisfaction than employees with lower or inferior performance. When increments in job performance lead to increments in intrinsic and extrinsic rewards, and these rewards in turn lead to increments in experienced job satisfaction, performance and satisfaction are likely to be positively correlated with each other, even though this need not necessarily be so. A positive satisfaction/performance relationship seems to be an ideal goal for both the individual and the organization because both performance and satisfaction are optimized, or at least increased, not because of a stronger satisfaction/performance relationship per se. This may be the case for the organization as a whole, that is, statistically. It is not necessarily true for each individual. However, when increments in performance do not lead to increments in rewards, satisfaction is not likely to be experienced, even though this need not necessarily be so. However, if satisfaction is not experienced under the lack of contingency between performance and rewards, extinction of high or superior performance behavior tends gradually to occur. Under such conditions (lack of contingency between rewards and performance), performance and satisfaction are likely not to be correlated (Lawler & Porter, 1967; Wexley & Yukl, 1977). Intrinsic rewards are more forceful in increasing the strength of the satisfaction/performance relationship because they are to a great extent "self-administered," whereas extrinsic rewards are administered by the organization (Lawler & Porter, 1967).

The Total Variable Pattern: Job
Characteristics, Organizational
Climate, Job Satisfaction, and
Job Performance

The relationship between job satisfaction and performance was discussed above. Even though a circular relationship may exist, the major causal direction seems to be $P \rightarrow S$ rather than the reverse, at least for intrinsic satisfaction aspects. As discussed in the section on organizational climate, the climate variable has been treated alternatively as an independent, an intervening, and a dependent variable. In the section on job characteristics, several investigations were cited, showing job content to be a major determinant of job satisfaction. Furthermore, O'Reilly and Caldwell's (1979) finding was discussed--that job characteristics may be socially constructed realities, based on informational cues about the job or the task. This research is in line with the attribution theory of the relationship between job performance and self-report data on organizational characteristics and behavioral variables. Basic research on this theory was conducted by Staw (1975). This empirical research was a criticism of the traditional causal direction from job characteristics and organizational climate to job performance. Employees use knowledge of job performance as a cue by which they ascribe characteristics to an individual, a group, or an organizational unit. Attribution theory assumes that employees have a need to understand and explain events and phenomena. Therefore, they develop a lay or "naive" psychology of behavior (Heider, 1958). The theory is concerned with the ascription of characteristics to any entity. Accordingly, job performance is a potent

independent variable, and many of the correlations between performance and self-report data may be accounted for by the following causal sequence: Level of performance → Attribution of characteristics → Self-report of characteristics. Cues or feedback of performance data may cause employees to ascribe an entire set of characteristics to individuals, groups, and organizations. This may be the explanation underlying the correlations derived from cross-sectional studies of organizational processes. That is to say, the significant correlations between performance and self-report data found in many studies may only reflect the respondents' "theories" of performance rather than actual events.

Staw (1975) used undergraduate students in his studies, and he manipulated information about the level of group performance. The author found that performance information had significant effects on job satisfaction, motivation, self-perceived ability, ability of teammates, role clarity, group cohesiveness, influence, and communication. The research of O'Reilly and Caldwell (1979) and of Staw indicated that the cues, information, and feedback one gets about the job or the task may influence one's perception of job characteristics. James and Jones (1980), in a rather comprehensive model, investigated the reciprocal causation of the relationship between job characteristics and job satisfaction in a sample of 642 nonsupervisory personnel from divergent work environments. The investigators used a nonrecursive, structural equation analysis, combined with tests of logical consistency. They found a nonsymmetric reciprocal causation of the relationship: job perceptions/ job satisfaction. The estimated job satisfaction → job characteristics causal association was as high as .60, whereas the job characteristics →

job satisfaction causal association was .24. The authors considered the causation from job satisfaction to job characteristics to be consistent with many attitude theories as well as with social learning and cognitive social learning theory (James & Jones, 1980, p. 126). The majority of researchers, however, have treated job characteristics as an independent variable, and job performance and job satisfaction as dependent variables.

Cross-Cultural Research in Organizational Behavior

Two major problems are inherent in conducting organizational research in a culture basically different from Western industrialized cultures. One is the general difficulty in collecting research data within another culture, such as methodological problems, values differences, differences in social perceptions between the host culture and the sojourner, and problems of intercultural interaction in the research process. The other is the problem of doing comparative research cross-culturally, including development of comparative standards and interpretative comparisons of research results that are valid and reliable to the cultures compared.

In this section, some cross-cultural studies of job satisfaction and job performance relevant to black people in Africa and in the U.S. are briefly described. Then problems in doing research in foreign cultures are discussed generally, but with particular reference to the Tanzanian culture.

Cross-Cultural Studies of Job Satisfaction and Performance

There is evidence that cultural effects exist in organizational behavior. In the area of job satisfaction and work motivation, Barrett and Bass (in Dunnette, 1976) stated that

a number of cultural, social, and economic factors which modify the structure of work relationships and motivation interact to shape the personality of members of a culture. Culture also has a moderating effect on job satisfaction, compensation models, managerial need satisfaction, and managerial goals (p. 1639).

Generalizations about organizational climate, job satisfaction, and performance in a cross-cultural context may be limited by methodological research problems. Concepts like "human qualifications of managers," "participation," "effective work environment," and "authoritarianism" tend to have slightly different meanings across cultures, and an organizational concept may not even exist in some cultures. Research within one cultural context, as in the present Tanzanian research, may be constrained in both theory construction and practical application. It is, however, generally thought that theories of job satisfaction and performance worked out in Western industrialized countries can be modified and validated for organizations in most of the developing countries.

Degree of poverty is one factor that may affect the validity of existing theories of job satisfaction and performance. Work in developed countries has mainly a positive connotation because it functions as a source of satisfaction of many needs, including higher-level needs for achievement and self-actualization. According to Maslow's (1954) need hierarchy, lower-level needs must be satisfied to the necessary extent

before higher-level needs can be met. Where workers are still at the physiological-need level, peculiar problems in job performance exist, which Maslow did not recognize. In the poorest countries of the world, a real limit on individual performance and organizational productivity has been found (Belli, 1971). The basic problem is the discrepancy between the energy requirements of the job and the intake of calories by workers. In Nigeria, for example, the work capacity of employees in the early 1960s was only 25% of that of workers in developed countries because of the lower intake of calories in Nigeria (Kerkhoven, 1962). Workers in Tanzanian organizations are probably better off because of the legally set minimum wage and the real employee wages, which often are higher than the minimum wage. Still, the caloric problem may be a codeterminant of the existing need structure and performance level among organizational members at lower levels. For intermediate and higher-level employees, as in the present research, caloric intake is higher and, consequently, ought not to affect significantly the level of productivity.

Maslow's theory of personality development has been the basis for an extensive cross-cultural study by Aronoff (1967, 1970) in the British West Indies. The results of the study were quite in accordance with the theory. Workers who had not enjoyed a secure childhood had higher physiological and safety needs than workers who had experienced a secure childhood. Affiliation and self-esteem needs, on the other hand, were higher for workers who had had a secure childhood.

When the physiological needs are the most potent ones (as in developing countries), money in terms of wage is not likely to serve as

a hygiene factor (i.e., one that creates dissatisfaction only if it is absent, and nondissatisfaction if it is present) (Herzberg, Mausner, & Snyderman, 1959). Wage increase serves rather as a motivator (intrinsic factor) that makes employees more satisfied, simply because the physiological needs, which are most potent, will be more satisfied by a wage increase. Herzberg's two-factor theory has been tested in different cultures. In an attitude survey of Finnish supervisors and Russian workers, the theory was supported (Herzberg, 1965a, 1965b). An investigation of 342 employees from three foreign subsidiaries of a multinational American firm provided different results (Simonetti & Weitz, 1972). Herzberg's two-factor theory was not found to be valid cross-culturally. The intrinsic factors (motivators) did contribute to job satisfaction in all three countries, but the contribution of extrinsic factors to satisfaction was a function of country and occupational level.

Several studies have shown that black people perceive their own job satisfaction as lower than white people do. This result seems to be valid both in the United States and in African countries (O'Reilly & Roberts, 1973; Orpen, 1978; Smith, Smith, & Rollo, 1974; Weaver, 1980). One reason for this difference in satisfaction may be the general disadvantage blacks have in many cultures and subcultures. Orpen (1978) stated in a South African study that

the disadvantaged Coloureds face greater "conflict" than the privileged Whites in present-day South Africa. Hence the fact that the Coloureds were significantly more alienated, less satisfied, and perceived themselves to be significantly more discriminated against than did the Whites, was taken as support for the Mertonian model (p. 59).

A larger survey of 3,600 managers from 14 countries revealed as one result that managers in developing countries were least satisfied, by a fairly wide margin (Haire, Ghiselli, & Porter, 1966). This was basically a need-satisfaction study. Need satisfaction was defined as the difference between the perceived fulfillment of a need and the perceived expectation of fulfillment. Managers from developing countries expressed a larger discrepancy between the two, hence greater dissatisfaction, than did managers from developed countries.

Besides studying job satisfaction, performance, and their correlates separately, it is important to investigate the relationship between job satisfaction and performance and their correlates. It is necessary to study this relationship because the more positive it is, the stronger rewards seem to be contingent upon performance, which is valued in most societies (Lawler & Porter, 1967). No reported research on this relationship in Tanzania or East Africa was found. It is, however, a goal of most organizations and nations to establish and maintain a positive relationship between job satisfaction and performance because it seems to be beneficial to the individual employee, the organization, and the society as a whole. The individual has the opportunity to get satisfaction of his/her most important needs through the work-reward contingency. Productivity and organizational effectiveness are likely to be higher, and the society at large values a strong national economy as well as satisfied citizens.

Methodological and Value Problems
of Doing Research Within
Foreign Cultures

Collecting valid and reliable research data in another culture implies a critical attitude toward the communication and information process through which the data are generated. Traditionally, there have been two basic philosophies or approaches to research in foreign cultures: the "etic" approach and the "emic" approach. This distinction was originally inspired by Sapir (1925), but Pike (1960) investigated the distinction further and labeled the two approaches "etic" and "emic" from the linguistic terms phonetic and phonemic. The etic approach studies behavior from the outside, first and foremost to compare cultures. Categories of behavior are imposed on observation. Objective observation is the research method, and interobserver reliability and replication are the criteria for validity. This approach is related to the positivistic research philosophy. The emic approach stresses the study of behavior from the inside of a particular culture. Usually one culture is studied at a time, and comparisons among cultures are not of major interest. Categories of behavior are derived from the informants' points of view--that is, from the members of the foreign culture. Participant observation is the primary research method, and intersubjective reliability is the test of validity. This approach is related to the dialectic research philosophy. It is also related to what Hanvey (1976) called transspeciation and "living the culture" as the highest level of intercultural awareness in the research process.

The question is not, of course, which of the two approaches is the best one, but rather how to integrate the etic and emic strategies in a particular research. In communication research, Pike (1966) suggested that the researcher progress from etic to emic analyses. An initial etic analysis provides a preliminary grid to an emic analysis. In other types of research, for example organizational research, one may as well argue that the research progresses from emic to etic analyses, or that one ought to go back and forth between the two approaches. It is important that the researcher in a foreign culture--the sojourner--perceive correctly the informants' perceptions of behavior, whether this is individual behavior, group behavior, or organizational behavior. But it is probably quite as important that the sojourner as a research designer objectify his observations in the form of an etic category system and systematic data collection. To refine the category system, it may be necessary to go back to an emic approach. Each approach provides a check on a method of generating new directions for the other approach. Combining the approaches in this way also has the advantage of maximizing the usefulness of the data for making practical applications to intercultural situations (Asante, Newmark, & Blake, 1979, p. 70).

When collecting research data in a foreign culture, a pseudo-etic approach is often used. This is an emic approach developed in a Western culture and translated into the foreign culture. Much of the organizational cross-cultural research described in the previous section seems to belong to this pseudo-etic approach. The criticism--and sometimes the fallacy--of this approach is the assumed equivalency between

Western cultural theories, upon which the research instruments are based, and those of other cultures. Theories are based on cultural conditions, and these conditions obviously vary (Asante et al., 1979, p. 238). This, however, does not mean that application of Western theories to research in other cultures cannot provide new knowledge of or insight into that culture. An applied theory may be verified, falsified, or modified, or a new theory may be developed. Second, knowledge and insight not directly related to the applied theory may be gained.

Values, ethnocentrism, and cultural relativism in the research process.--Another problem researchers meet in the foreign culture is the potential consequences of the discrepancy between one's own values and the values prevailing in the foreign culture. Differences in values are essential to the instrumentation of the research, to the intercultural communication encounter, and to the interpretation of the research results. Disclosing and clarifying one's own values as well as gaining a sound understanding of the foreign culture's values may reduce ethnocentrism and other biases in the research process.

1. Values and value biases in the research process. Values are determinants of human actions and inactions, including decisions affecting social research. Values aid the investigator in choosing research topics and problems that are socially relevant. However, there is also a danger that the researcher's personal and cultural-value biases may influence the choice of research problems, the outcome, and the interpretation of the research results. Selltitz, Wrightsman, and Cook (1976) highlighted this point by stating that scientists

would like their research findings to come out in a way that conforms to the way they think the world is, or that fits with the particular theory they have put forward or to which they subscribe, or, at least, that is consistent with findings they have reported earlier" (p. 53).

The best way to minimize one's own value biases in intercultural research is probably to clarify, disclose, and discuss one's own motivations, preconceptions, and values before and during the research process.

As regards the values existing in the particular culture within which research is carried out, it is crucial that the researcher has knowledge about these values and how they constitute the basis for social research. Terramedia (Africa and the Middle East) has managed to retain--for better or worse--many values that date far into its past. Many of these values still play a major role in the thought patterns and behavior of people in many Terramedian countries. To understand work behavior, particularly in noneducated rural populations, it is necessary to analyze the nature of traditional values. In Subsaharan cultures, some such values are patrilinealism, polygyny/monogamy, endogamy/exogamy, cyclism, ancestralism, animism, time holism, and communalism. Of particular interest to the study of organization behavior in the Tanzanian culture are the concept of time and the idea of communalism.

2. The concept of time. When doing work and organizational research in African cultures, one should keep in mind the concept of time. Perception of time and time constraints as part of effective work is not equally important to non-Western work cultures as it is, for example, to the American work culture. In spite of this, more and

more developing nations emphasize in policy documents the necessity of hard work, high job performance, and effective work methods. The typical rural African has little future-time awareness. To push for work schedules and strict adherence to agreed-upon appointments is regarded by many cultures as both "colonial" and a violation of a basic life value. Durand (in Wickert, 1967) analyzed the time dimension in the African context in the following way:

The notion of time, which is totally different in the traditional as compared with the technical environment, is going to be the occasion of numerous conflicts between worker and employer. The employer who employs an African thinks that he has bought some time from the African and can organize that time in an absolute way, for example, by imposing on him a certain amount of production, or a cadence, or a rhythm in relation to industrial needs, but often a rhythm very different from a natural one.

The African does not look at it this way; he has put himself in the service of a master, and, most often, has sincerely decided to obey him, but does not imagine that his time, "a fraction of universal existence which is given to him by God" no longer belongs to him. He does not think himself to be dishonest or loafing or wasting time which, in good faith, he still thinks he possesses. The necessity for speed on a job of which he often sees neither the end nor the purpose, does not appear to him. He will need to be provided with frequent external stimulation because no one has given him interior stimulation. Thus the best way of speeding up his rhythm will be to pay him according to the task so that he will be permitted to buy his right to leisure, to the liberty of doing nothing, the task having been completed; on the other hand, the payment for production, which only promises him money, often remains ineffective. I have seen the instance where the introduction of a natural, musical, and gestural rhythm obtained, this alone, the same results that were obtained by monetary rewards given in a neighboring workshop (p. 165).

It is worthwhile to be aware of different cultural conceptualizations of time when doing research in a foreign culture. Porter and Samovar (in Samovar & Porter, 1976, pp. 20-21) stated that Western cultures tend to conceptualize time in lineal-spatial terms, meaning that we are aware of a past, a present, and a future. Western industrialized

countries are very time conscious. Time can be manipulated, saved, wasted, or spent effectively. It may, however, also be the case that people in highly industrialized countries tend not to live and experience fully the present--the here and now. Many people do not know how to live fully in the present, but rather push themselves toward the next task in the next future time. Many industrially advanced cultures tend to treat the present as an intermediate point between past and future. Porter and Samovar argued that some individuals consider an immersion in the present to be paganistic.

Understanding the culturally conditioned time dimension is important, not only in designing categories of behavior and in scaling the items (research instrumentation), but also in intercultural research encounters. Chronemics is an intercultural problem to which one needs to be sensitive. For example, the timing of verbal exchanges during conversations may not be the same in different cultures. People in many African cultures leave a little more silence between verbal statements than Americans do. Therefore, Americans tend to judge people who use much silence in verbal exchanges as shy, inattentive, bored, or nervous. Americans may, in the silent period, begin to repeat, paraphrase, or talk louder (Schnapper, in Smith & Luce, 1979, p. 137).

The Trobriand culture has a holistic conception of time (Lee, 1950). It was found that no boundary exists between past Trobriand existence and the present. Linguistically and existentially, Trobrianders present the past, the present, and the future as the same.

Knowledge and continuous awareness of these different temporal orientations may contribute significantly to successful research encounters and research instrumentations in foreign cultures.

3. The value of communalism and its relationship to hard work.

In communitarian societies, such as that of Tanzania, the group is seen as very important, probably more important than the individual. The local community, with its many tightly knit groups, takes on an identity for people. Within such a community, the individual acquires a reliable form of social security, which negates the need to depend on outsiders. This may have an important influence on the work, the culture, and the rewards or lack of rewards one perceives to be derived from the job and the organizational membership. The spirit of communality has been formalized in Tanzania as "ujamaa" (familyhood). This communalism is similar to the notion of "African socialism," "Arab socialism," and "guided democracy" being articulated in other parts of Terramedia. The policies of ujamaa socialism, outlined by President Nyerere most dramatically in the Arusha Declaration of 1967, declare many long-standing customs to be old-fashioned and out-of-date.

Besides ujamaa, the particular Tanzanian socialism is indicative of such ideological concepts as self-reliance, workers' participation, and the leadership code. Even though self-reliance is emphasized, dependence becomes a positive virtue because one is dependent on the ujamaa for the common good. The ujamaa village becomes a source of good times, generates and transmits power to the ujamaa members, and acts as a safeguard of custom. Even though support for the transition to ujamaa villages has not always been wholehearted, the commonality

and group feeling are widely developed in the Tanzanian culture. More self-centered Western individualism is officially, and also de facto, deemphasized in the Tanzanian culture. Ujamaa villages and most formal organizations are taught to achieve self-reliance, so that they do not need to rely on the government or regional authorities for economic reasons. Workers in formal organizations are supposed to participate with management in decision making. This is "workers' participation," or what is termed "industrial democracy" in many Western societies.

Tanzania has in a remarkably consistent way carved out its particular socialist ideology, which, in theory, is probably one of the most democratic in the world. The national ideology is very much a result of the work of Mwalimu Julius Nyerere, but it has been influenced by other forms of socialism as well. Some similar elements are found in the socialism of China, Yugoslavia, and the Scandinavian countries. There is, however, a discrepancy between the fine ideology as stated in policy documents and the somewhat "colonial" attitudes and values still prevailing in the Tanzanian population.

The Tanzanian leadership philosophy, which can be subsumed by the national ideology, is very important in the daily planning and leadership functions in organizations and ujamaa villages. The stated leadership philosophy and leadership style are very much in concert with modern American and Western leadership theories as described in textbooks of organizational behavior and general management. Tanzanian leadership philosophy is based on participative-democratic approaches to leadership in which delegation, decentralization, and workers' participation are emphasized. As regards the leadership code, this is

partially based on nonownership of property and other Marxist principles, adjusted to Tanzanian conditions. As in all countries, there is a discrepancy between stated or accepted and prevailing leadership behaviors. The Machiavellian leader and manipulator exists in all countries and in all organizations, to a greater or lesser extent.

The Tanzanian government and policy documents emphasize work motivation and hard work for everybody in order to achieve the necessary level of self-reliance, and in general to eliminate illiteracy, poverty, and disease. From time to time, ideological concepts or slogans are created to ease the implementation of work policies. "Uhuru na Kazi" (Freedom and Work) is one such slogan. "Maendeleo" (development) became a national catchword in the 1960s. Leaders told citizens: "Usiwe kupe" (Do not be a tick.). This slogan means that a Tanzanian citizen should not subsist on the life blood of others, but learn "kujitegemea" (to be self-reliant). Terms like "ujamaa" (familyhood, brotherhood) and "ushirikana" (cooperation) have entered Tanzanians' political vocabulary. Radio Tanzania and the efforts of school-teachers and government officers have done much to interpret the meanings of various slogans to the rural as well as the urban population. Slogans like "Uhuru na Kazi" connect the efforts of the 1940s and 1950s (uhuru, or "independence") to the goals of the 1960s and 1970s (development through kazi or hard "work") (Tessler, O'Barr, & Spain, 1973, p. 87).

All Tanzanians are supposed to work hard to develop, prosper, and experience true liberty. President Nyerere and government officials have quoted in numerous speeches the proverb: "Mgeni siku mbili; siku

ya tatu mpe jembe," which means that you should treat a guest as a guest the first two days he stays in your house, but on the third day you should give him a hoe so that he can cultivate the soil like the other members of the family.

The value of communalism is not meant to be in discord, but rather in accord, with the policy of hard work. Everyone has to work toward self-reliance, development, and prosperity for common goods and common benefits. The value of communalism, when deeply rooted in the population, will certainly affect the work climate, job design, job satisfaction, and other aspects of the work culture.

4. Ethnocentrism and cultural relativism. The major research problem that arises from differences in values is that people tend to use their own societal values as the standard when investigating and judging employees and organizational conditions. People tend to assume that their value system is the best, an assumption that is likely to result in making value judgments about others. Such an attitude is ethnocentrism. Asante et al. (1979) stated:

We always imply that our culture and country are the greatest. While there is nothing wrong with being proud of our culture and country, it is not right to imply that others are inferior. Our textbooks in social sciences and humanities contain plenty of ethnocentric information (p. 158).

The opposite of ethnocentrism is cultural relativism (Herskovits, 1973). In the research process this means that the investigation is based on the values of others within the foreign culture rather than on, or in comparison with, one's own values. Now, Asante et al. (1979) argued that even cultural relativism is not the ultimate answer to intercultural research and communication. Each culture has something

to contribute or offer to the world. What each culture can contribute to the rest of the world requires effective communication, and that communication should be free of both ethnocentrism and cultural relativism. "One should be able to point out the best aspect of a culture so others could borrow it and enrich themselves" (Asante et al., 1979, p. 159). This however, seems to imply some value judgments by some individuals about what in a culture contributes to the rest of the world. And when people make value judgments that presumably are valid across cultures, these individuals easily will be accused of practicing ethnocentrism. Therefore, some amount of value judgment and ethnocentrism seems unavoidable in cross-cultural matters. Even within an emic research approach, value judgments are intertwined in the research--value judgments that some people consider to be ethnocentric.

5. Value differences and scaling of research items. Value biases may, more or less sophisticatedly, be concealed in the research design. Differences in values between the researcher and the respondents, which the researcher is not aware of, may greatly invalidate the research data. An application of this type of value problem to the scaling of items will briefly be demonstrated. The point is that the researcher must orient the scales (positive-negative) in agreement with the existing cultural values attached to each item, not in accordance with his/her own values. An item such as "the degree to which superiors like it that employees are checking every work detail with them" may have diametrically opposite value orientations attached to it, depending on the culture whose members are supposed to respond to the item. To Western industrial societies this item has a negative value

formulation because most superiors do not and should not like the notion that employees are checking every work detail with them. But in some developing countries, respondents may perceive this item as positively formulated: it is a good thing that employees are checking every work detail with their superiors, and the superiors like it. Another example that may lead to different responses in two different cultures, because of opposite values attached to the item, is the following: "The degree to which superiors appreciate that employees speak their minds, even if it means disagreeing with their superiors." To most superiors in industrial societies that practice a participative-democratic leadership, the item has a positive connotation. To cultures that are more authoritarian, it may not be regarded as correct for employees to speak their minds. If these or other items are part of an index measuring a latent trait such as organizational climate, the aim is to find out how good (positive) or bad (negative) the climate is, as perceived by the individual respondents. But then, it is essential that the researcher manage to orient the scale (positive and negative scale end) for each item correctly--that is, in agreement with existing cultural values among the respondents.

Cultural Influences on Social Perceptions

Cultural characteristics influence perceptions of social phenomena. In this section, the following determinants of social perceptions are briefly discussed: iconic and symbolic representations of reality, perceptions of social phenomena in other cultures and frames

of reference, and language as a co-determinant of the way people perceive ideas and social phenomena.

Iconic versus symbolic representation of reality.--A problem of intercultural communication in the research process is the relative emphasis on iconic and symbolic communication. Leavitt (1978) stated that iconic or pictorial thinking is the process of representing reality through mental images. Many non-Western cultures understand ideas and social phenomena iconically rather than symbolically. Symbolic thinking applies abstract symbols to represent things, ideas, and events. Reality is understood with word symbols and with numbers.

The emphasis on symbolic thinking is a function of educational level. That is why children and adult illiterates use iconic thinking more than do formally educated people. However, iconic thinking is also a function of particular cultural idiosyncrasies. Some cultures use iconic thinking more than other cultures, everything else being equal. Doob (1961) argued that when a relation is iconic, the medium is able to represent in miniature or in essence the reality being communicated. The audience needs to do very little decoding because people react to icons roughly the way they do to reality. People do so because they perceive instantly that the icon is not reality but very much like it. The pictograph and mass media (particularly television) offer icons that are important in diffusion of information in developing countries, which have a low educational level, and which, to a higher degree than developed Western countries, use iconic representations of reality. Doob stated further: "In a symbolic relation, the medium is able to suggest reality because, not through any necessary

or inherent connection, but through custom and habituation, the symbol arouses responses very similar to those evoked by reality itself" (p. 61). Almost all words are symbols. The few words in a language that are onomatopoeic (sound-"painting," sound-representing) can be said to represent sounds iconically. Metaphors and similes may contain iconic elements, even though they are basically symbolic.

In doing research and training in the Tanzanian culture, one should realize that iconic representations of problems and phenomena are more widespread than in Western societies. The motivation to study and the results of learning among Tanzanian students are likely to increase if the teacher/trainer uses pictorial analogies, metaphors, and similes in the training and learning process. When designing categories of behavior for research purposes, one should take into account that Tanzanians think more in totalities that are easy--and probably also necessary--to represent iconically. When a young tribesman decides not to marry his fiancée, he may communicate his change of heart by sending her a broken twig. The girl knows through cultural learning what this broken twig means. This is quite an effective iconic communication, even though the broken betrothal, signified through the broken twig, is a response that is far removed from what is directly perceived.

This highlights the fact that foreigners who are going to conduct research in African cultures, and others who are going to work and live in a developing country, probably will be more successful if they are aware of the effect of iconic as well as proper symbolic representation of reality among the native people.

Perceptions of culturally conditioned social phenomena versus own frames of reference.--As pointed out earlier, valid research in a foreign culture necessitates adequate perceptions of the culture and the organizational behaviors studied. An understanding of the categories of behavior from both an emic and an etic approach strengthens the research. Samovar and Porter (1976) emphasized that people who are culturally different do not share the same experience, nor do they share the same perceptions. They see the world differently. Their life styles as well as their beliefs, values, and attitudes may be quite different. Social perception, the process by which we attach meaning to the social objects and events we encounter in our home environment, is an essential aspect of any social research or any communication act. Social perception becomes even more crucial when one considers intercultural research or research within a foreign culture without any comparison with other cultures. This is true because culture conditions and structures what we perceive in such a way that we tend to develop culturally determined perceptual sets. These sets not only influence which stimuli reach our awareness, but they also influence our judgment of perceptions--that is, the attachment of meaning to stimuli. Because we all are products of our own culture (socialization and acculturation), that culture conditions our perceptions. Korten (in Samovar & Porter, 1976, pp. 124-133) examined the system of categories that people from different cultures use in perceiving other persons. In his study of differences in social perceptions between Ethiopians and Americans, he demonstrated that the two cultural groups perceived their fellow university students very differently with respect to such

categories as interpersonal attractions, self-concept, opinions and beliefs, and others' relations with specific people.

Singer's (in Samovar & Porter, 1976, pp. 110-119) perceptual model also stresses that culture conditions our perceptions, and that it shapes our view of reality. The author discussed the accuracy of perceptions, and argued:

Fortunately, it is not imperative to the functioning of groups that communications be perceived 100% accurately. Fortunately, too, there are corrective devices inherent in almost any communication system. One such device is the "feedback mechanism" which may allow for continuous testing of accuracy of perception" (p. 115).

This is relevant to the research process and brings us back to the advantage of using both the emic and etic approaches of research.

Triandis (in Samovar & Porter, 1976, pp. 119-124) also demonstrated in a study how one's cultural background co-determines what he perceives. This provides another confirmation of the fact that cultural experiences influence what a researcher brings into his research domain, how he participates in information exchange, and the way he reacts in the intercultural encounter.

The frames of reference one uses in research communication are developed through a long socialization and acculturation process. These frames of reference may take on a function of stereotypes, and will guide and influence the perceptions one gets in the intercultural setting. Training to become more aware of one's own cultural frames of reference, cultural exposure, and training to perceive the foreign culture from its frames of reference may greatly improve the effectiveness of intercultural encounters during the research process. Development

of empathy, and even transsection, may enable the researcher to step into another culture's frames of reference, and thereby also facilitate the process of seeing phenomena and events the way the host culture does. For the researcher it is also necessary to move from such an emic approach back to an etic approach. Switching back and forth between these basic approaches seems to be necessary in order to obtain both valid and reliable research data.

Language as a co-determinant of the way people perceive ideas and social phenomena.--Language is another essential variable in the way people perceive ideas and phenomena. The major idea of the Sapir-Whorf hypothesis is that language determines how people perceive the world and also influences the way in which people think. Hoijer (in Samovar & Porter, 1976) stated that language is itself "a way of directing the perceptions of its speakers and it provides for them habitual modes of analyzing experience into significant categories" (p. 152). Therefore, the Sapir-Whorf hypothesis can be stated in another way: "Language functions, not simply as a device for reporting experience, but also, and more significantly, as a way of defining experience for its speakers" (p. 151). Language is the manifestation of the perceptions a group of people hold.

In the Tanzanian culture, Swahili is the official language; English is the second language taught at school. However, the mother tongue, or the first language for most Tanzanians, is a tribal language. Luo, Chaga, Masai, and so on are tribes that have their own particular mother tongues. Therefore, the language used in research encounters (English, and even Swahili in many places) is a lingua franca.

The question of designing the research instrument in the Swahili or in the English language has basically three aspects: (1) Swahili is generally better understood than English; (2) modern organizations are relatively new in the Tanzanian culture, and the Swahili language does not yet contain the necessary terms for all aspects of organizational behavior, at least not at the more sophisticated research level of an etic approach; and (3) it is necessary to go back and forth between the emic and etic approaches, with emphasis both on iconic and symbolic representation of organizational realities.

In this section the writer discussed research on job satisfaction and performance relevant to black people in Africa and the United States. In addition, some major problems were described as regards collecting valid and reliable research data in foreign cultures, with particular reference to the Tanzanian organizational culture. It was pointed out that organizational concepts may have different meanings across cultures, and that one or more concepts related to organization and management may even be lacking in a foreign developing culture. The etic, emic, and pseudo-etic research approaches were discussed, together with advantages of going back and forth between the approaches. Value biases, ethnocentrism, and cultural relativism in research and research encounters were highlighted. Furthermore, the concept of time and the value of Tanzanian communalism and its relationship to job performance and productivity were discussed in terms of national goals. Differences in work values between Western and African cultures as a problem in scaling research items were also discussed. Then, the advantage of taking into account the stronger tendency of iconic

representation of reality in African cultures than in Western cultures was pointed out. Finally, two particular social-perception problems were discussed: the tendency to use one's own frame of reference in perceiving culturally conditioned social phenomena, and language as a co-determinant of social perception. Researchers need to be aware of and alert to all these phenomena or problems to increase the validity and reliability of research findings in foreign cultures.

CHAPTER III

DESIGN OF THE STUDY AND METHODS OF ANALYSIS

The Survey Method and Development of Measurement Instruments

Written, structured questionnaires were used in this study of organizations. Predesigned and predeveloped categories of attitudes and behaviors constituted the structured questionnaire.

The measurement instruments used in data collection were:

1. A major survey questionnaire administered to all respondents in the sample. This instrument contained indices of organizational climate, job characteristics, and job satisfaction; scales for the measurement of job performance (self-ratings); and the necessary demographic items.
2. A short questionnaire administered to the respondents' immediate superiors for the purpose of obtaining supervisory ratings of job performance.
3. A questionnaire administered to an external consulting firm for the purpose of obtaining "objective" expert ratings of organizational climate of the respondent organizations.

The Questionnaire Method

The structured questionnaire was chosen over the structured or semistructured interview for a number of reasons. First of all, it would have been too costly and time consuming to conduct long interviews

in eight organizations located in three different areas of Tanzania. Second, the respondent organizations were willing to let the researcher administer the questionnaire on the site; that is, all of the respondents could be gathered together in one room to answer the questionnaire. By this arrangement, a high response frequency was likely. Third, by having all the respondents in one room, they were free to ask questions individually about items that were not clear. Therefore, a good understanding of each item was likely. Fourth, this "test" situation was more standardized than structured interviews administered individually would have been. Fifth, the level of insecurity and anxiety, which could distort the responses, was judged to be lower in this "classroom" situation than in face-to-face interviewing because there was no direct person-to-person confrontation in the "classroom" situation. Sixth, the respondents were assured that nobody other than the expatriate researcher would be allowed to look into the individual data, because the researcher collected the completed questionnaires himself. Naturally, the management of each organization agreed to such confidentiality. This was also the basis for developing the necessary rapport and trust between the researcher and each group of respondents before they answered the questionnaire. Of course, research interviews do have some advantages over written questionnaires, but by administering the questionnaire in this particular way in the Tanzanian culture, some of the disadvantages of the traditional mail questionnaire were eliminated, as described above.

The survey method applied in this study was in concert with the etic research approach discussed in Chapter II. However, preliminary

interviews and informal discussions about organizational problems were conducted before the research was undertaken. Furthermore, the researcher had been working in a Tanzanian organization during the two-year period preceding the research. Finally, as a management trainer, the researcher participated in training and development for other Tanzanian organizations. These activities indicated that the emic approach was also used, at least partially. The fact that the researcher worked and lived in Tanzania and studied the Swahili language, the national ideology, the leadership philosophy, workers' participation, organizational problems, customs, habits, and other idiosyncrasies of the Tanzanian society supports the statement that both emic and etic approaches were used in gaining an understanding and an awareness of the Tanzanian work culture. Still, the categories of behavior used in the research instruments pointed clearly toward use of an etic approach in such a survey questionnaire. However, the theories applied in this research had been worked out in Western cultures. Therefore, the present research also contains elements of the pseudo-etic approach.

Instrumentation

In this section, design of the different research instruments is elaborated. Before instrumentation was begun, interviews and informal discussions were conducted with people in the organizations in which the writer was working. In addition, the intended study, with its major research problems, was discussed with management personnel in all of the respondent organizations.

Three of the local lecturers in one institution of higher education were interviewed about what Tanzanian employees are looking for in a work situation, what is important to them, what satisfies different categories of employees, what makes them work hard, and so on. The first part of the interview was rather informal and unstructured; the second half was more structured.

Numerous informal discussions with local colleagues as well as with expatriates constituted a continuous activity throughout the planning and design stages. Many people contributed to items and work areas relevant to job content, organizational climate, and job satisfaction.

Designing the major survey questionnaire will be discussed first. The sample of employees who responded to this questionnaire answered items constituting an index of organizational climate, an index of job characteristics, another index of job satisfaction, three scales or aspects of own job performance (self-ratings), and demographic variables. In addition, three scales were designed for supervisors' ratings of the respondents' job performance. Finally, a questionnaire was designed, on which consultants in an external consulting firm were to rate various aspects of organizational climate. Therefore, two measures of job performance were obtained: self-ratings and supervisors' ratings. Furthermore, two measures of organizational climate were elicited: employee-perceived climate, and ratings of the same organizational climate by an external consulting firm.

Design of the major survey questionnaire.--The main purpose of this research was to study the relationships among four major variables: job characteristics, organizational climate, job satisfaction,

and job performance. Each of the indices of job characteristics, organizational climate, and job satisfaction was divided into subvariables that represented various aspects of the respective major variables.

1. The organizational climate index. Organizational climate was measured by 89 items across 10 subvariables. Some of the items were designed by the researcher, some were taken from informal sources, and some were derived from the research literature discussed in Chapter II. The researcher formulated a definition of organizational climate that is basically the same as that of Forehand and Gilmer (1964), and is in accordance with the earlier-described multiple measurement/organizational attribute approach (James & Jones, 1974):

Organizational climate is the set of characteristics that describe the work environment or atmosphere, predominantly at an organizational level, and which (a) distinguish the organization from other organizations, (b) are relatively enduring over time, and (c) influence the behavior of the organization members.

As regards the requirement of measuring entities at an organizational level, the researcher relaxed this requirement by including in the definition "predominantly at an organizational level." In large organizations, people perceive many characteristics of their own department or work group as attributes of the organization, particularly if they do not manage to acquaint themselves with all parts of the organization and the organization as a whole. Hence, it is likely that some attributes of the department one belongs to are taken as organizational attributes. For example, management quality is often evaluated as the quality of supervisors within one's own department, simply because one lacks valid information about managerial quality in other departments and at the top organizational level.

The 10 subvariables of organizational climate are defined as follows:

STRUCTURE: Constraints in the organization: how many rules, regulations, and procedures there are; the degree of emphasis on bureaucracy and going through channels; the degree to which the organization specifies and codifies; and the extent to which there is a loose/informal or tight/formal atmosphere of constraints (10 items).

RESPONSIBILITY: Degree of autonomy but interdependence at work: not having to double-check all employee decisions, degree of independence of others in making decisions; and degree of self-determination, consequence-taking, and responsibility when employees perform their jobs (10 items).

REWARDS: Extent to which employees are rewarded for high performance: emphasis on positive rewards rather than punishments; degree to which people perceive pay, promotions, fringe benefits, and other rewards as equitable and fair (9 items).

STANDARDS: Amount of implicit and explicit goals and performance standards, the challenge represented in personal and group goals, and the emphasis of the organization on achieving these goals and standards (6 items).

MANAGEMENT QUALITY: Technical and human quality of managers and supervisors: degree to which superiors make use of professional knowledge in their work, degree to which superiors support and help employees in their work, and the ability to establish warm and friendly relationships with subordinates (9 items).

COMMUNICATION: Degree to which organizational and interpersonal communication is effective: willingness to share information; degree to which formal and informal communication goes both vertically and horizontally; and degree to which people are open, trusting, and authentic in their communication (10 items).

DECISION MAKING: Degree to which the organization has an effective and participative decision-making system in which professional knowledge is utilized, and the opportunity employees have to influence their own work situation (10 items).

CONFLICT: Degree to which disagreements and interpersonal conflicts are accepted as normal phenomena in an organization; degree to which employees speak their minds, openly bring up conflicts for discussion, and work through conflicts rather than suppressing or denying them (9 items).

IDENTITY: Extent to which employees feel they belong to the organization, that they are valuable members of work teams, that they possess personal involvement in their work; degree to which they are loyal to the organization; and degree of identification with the organization's objectives and policies (7 items).

INTERPERSONAL MORALS: Extent to which positive interpersonal climates exist in the organization: degree to which acceptance, tolerance, confidence, trust, honesty, favoritism, pushing, manipulation, conspiracy, and misuse of authority exist (9 items).

An example of the design structure of organizational climate items follows:

		<u>EL</u>	<u>VL</u>	<u>L</u>	<u>N</u>	<u>M</u>	<u>VM</u>	<u>EM</u>	
a. How much is there now?	min.	1	2	3	4	5	6	7	max.
b. How much should there be?		1	2	3	4	5	6	7	
c. How <u>satisfied</u> are you with this characteristic <u>in your</u> <u>own job</u> ?		<u>VD</u>	<u>D</u>	<u>TD</u>	<u>N</u>	<u>TS</u>	<u>S</u>	<u>VS</u>	
		1	2	3	4	5	6	7	

The (a) and (b) scales go from extremely little (EL) to extremely much (EM). The (c) scale goes from very dissatisfied (VD) to very satisfied (VS).

For some of the items there was no point in keeping the (c) question. In such cases, that question was deleted from the item design. For example, the climate item--"The pride of belonging to this organization"--had little or no meaning as a satisfaction question--"How satisfied are you with this characteristic in your own job?" That is, the question referred to how satisfied employees were with their own pride, which was not very meaningful as a satisfaction item.

As discussed in the theoretical part of this research, the phrases "is there now" and "should there be" were borrowed from Porter, but they are basically similar to Locke's discrepancy model of job satisfaction. The researcher also used this model in operationalizing the organizational climate variable. This gives two measures of organizational climate:

$$OC = \sum \text{facets} \text{ (Is Now)}$$

$$OC = \sum \text{facets} \text{ (Should Be - Is Now)}$$

The two conceptions in parts (a) and (b) of each question were delineated in the survey questionnaire as follows:

- a. "How much of this characteristic is there now [at present] in the organization as a whole?
- b. "How much of this characteristic should there be in the organization as a whole? This sentence is to be understood in the following way: How much of this characteristic do you think is reasonable to expect in order to satisfy most of the employees in the organization?"

Answers to the (c) question provided a measure of job satisfaction based on some of the same items as used for measuring organizational climate.

Two examples of how to answer the (a), (b), and (c) questions were included in the questionnaire. In addition, the researcher explained orally the differences among these questions during the administering of the questionnaire, and he also orally went over the two examples described in the questionnaire. Feedback from the respondents indicated a good understanding of the triple-question design.

The items were randomly distributed in the questionnaire. This made it difficult or impossible for respondents to identify a set of items related to a particular aspect of the organization (for example, structure). Identification of such a set of related questions could give a halo-effect response pattern. Some of the items were formulated positively, others negatively. This made it necessary, during the coding process, to reverse the scale for negatively formulated items so as to use consistently higher-level figures (codes) for positively evaluated aspects of organizational climate and lower-level figures for negatively evaluated aspects.

2. The job characteristics index. In the literature review the three characteristics of motivating jobs were discussed (Hackman & Lawler, 1971). Hackman et al.'s (1974) theory relates the restructuring of work content to three major psychological processes. These processes are the same as the characteristics of motivating jobs. On this basis, this investigator suggests the following definition of job characteristics:

Job characteristics are job aspects, predominantly of the job content itself, that are related to an individual's experienced meaningfulness of the work, experienced responsibility, and knowledge of results.

In this definition, the phrase "predominantly of the job content itself" is included because the job characteristics that have been developed so far are, first of all, the core dimensions related to the job itself, that is, to the job content. There are, however, other job characteristics that also are partially related to the job context or environment and not exclusively related to the job content. "Dealing with others" and "friendship opportunities" are two such job aspects. Because these and probably other job aspects are not only related to the job itself but more to the job context, and because some aspects of the job context also seem to be significantly related to work motivation and job satisfaction, one has no rational basis for identifying job characteristics that are solely related to the job content.

The strategy for obtaining information about the amount of each job characteristic was based on the discrepancy theory, as was the case in operationalization of organizational climate.

The following is an example of the design and operationalization of job characteristics:

The amount of variety (doing different things in your job)

		<u>EL</u>	<u>VL</u>	<u>L</u>	<u>N</u>	<u>M</u>	<u>VM</u>	<u>EM</u>	
a.	How much is there now?	<u>min.</u>	1	2	3	4	5	6	7 <u>max.</u>
b.	How much should there be?		1	2	3	4	5	6	7
c.	How important is this to you?		1	2	3	4	5	6	7

The respondents evaluated the actual condition or amount of each indicator of job content/context as they themselves perceived it. ("How much is there now?") Then they rated each item according to the question: "How much should there be?" The definition of "should be" was the same as it was for measuring organizational climate; this definition was contained in the questionnaire.

The third question, dealing with "importance," was discussed in the literature review on job satisfaction. It basically provides information about the need strength of an individual. The more important it is to have a certain amount of a particular job characteristic, the more dissatisfied the individual is if that need is not met.

The researcher designed items related to nine subvariables of job characteristics. The subvariables are defined as follows:

PERSONAL GROWTH AND DEVELOPMENT: Degree of challenge, use of one's abilities, accomplishment, responsibility, opportunities to learn and grow at work.

VARIETY: Degree to which a job involves a variety of different activities in carrying out the work, which require the employee to use a number of different skills and talents.

AUTONOMY: Degree to which the job provides the employee substantial freedom, independence, and discretion in scheduling the work and in determining the procedures to be used in carrying it out.

TASK IDENTITY: Degree to which the job requires completion of a "whole" and identifiable piece of work--that is, doing a job from beginning to end with a visible outcome.

TASK SIGNIFICANCE: Degree to which the job has a substantial influence on the lives or work of other people, whether in the immediate organization or in the external environment.

FEEDBACK OF JOB PERFORMANCE: Degree to which carrying out the work activities required by the job results in the employee obtaining direct and clear information about the effectiveness of his/her performance from the job itself as well as from supervisor and co-workers.

DEALING WITH OTHERS: Degree to which the job requires the employee to work closely with other people in carrying out the work activities.

FRIENDSHIP OPPORTUNITIES: Degree to which a job allows employees to talk with one another on the job and to establish informal relationships with other employees at work.

STATUS AND PRESTIGE: Degree of self-esteem from the job, work conditions, job title, and other factors contributing to status and prestige.

Eighteen items measured job characteristics. Most of these items were taken from the research literature (Hackman & Lawler, 1971; Hackman & Oldham, 1975).

The first job characteristic, opportunity for personal growth and development at work, reflected higher-order needs. Such needs are related to intrinsic motivation; the needs are satisfied when the employee experiences high job performance in a job content/context that

gives the individual a sense of growth and development. Research has shown that higher-order needs are not emphasized very much in developing countries or tribal societies (Orpen, 1978). Furthermore, those people in a developing country, or blacks in the United States, who have adopted work attitudes that are typical for Western industrialized societies experience higher-order needs more than those who have not adopted such work attitudes to the same degree (Orpen, 1978; Weaver, 1975). Therefore, the job characteristic of personal growth and development was measured as one aspect of the job content/context.

The researcher included "decision-making power" as an aspect of the subvariable "task significance." Power and authority attached to one's position are probably significant aspects of the tasks that constitute the job, whether this represents task significance intraorganizationally or in the external environment or community.

Hackman and Oldham (1975) dichotomized "feedback about job performance" into feedback from the job itself and feedback from "agents." These two aspects seemed to be so intertwined that they were kept together as one subvariable of job characteristics. However, items were designed with emphasis on one or the other aspect of this subvariable.

The job characteristic "dealing with others" probably has two aspects, one related to giving service or help to people, and the other related to dealing with people in general. The concept of "dealing with people" probably has a connotation of power utilization--that is, the opportunity to exert power or authority over people. This need of power is certainly stronger in some cultures than in others. The power

aspect of a job is also included as one aspect of the subvariable "task significance."

Status/prestige is a job characteristic that exists in developed as well as in developing countries. Even in Tanzania, which has a relatively democratic ideology and leadership philosophy, and a de-emphasis on status and prestige symbols, this job characteristic is far from absent. The need for status and prestige seems to exist all along the work ladder, from rank-and-file workers to top managers and academicians. Stone and Porter (1975) operated with two measures of prestige as a job characteristic: (1) prestige of the job when compared to other jobs at the same level in the division or department and (2) prestige of the job when compared to all other jobs in the division or department. The present researcher designed two items that measured status/prestige as one subvariable of job characteristics.

3. The job satisfaction index. The researcher adhered to the same concept of "job satisfaction" as did Schneider and Snyder (1975). This notion differentiates well between individual/evaluation-oriented job satisfaction and organization/description-oriented organizational climate as discussed in Chapter II.

The operationalization of job satisfaction was based primarily on the discrepancy theory of job satisfaction. The researcher used the same operationalization as he did for job characteristics: "should be" and "is now." These expressions were defined in the same way as when they were applied to the measurement of job characteristics. The "importance" item was also included. Because "importance" is basically the same as "work values" in Kalleberg's discrepancy theory, Kalleberg's

mathematical model of job satisfaction could also be used in this research. The "importance" concept also is basically identical to the valence of an outcome in Vroom's expectancy theory. However, this theory could not be applied in the present research because of the lack of data on "instrumentality."

In the present research, job satisfaction could be operationalized in seven ways as discussed in the literature review. Two of the operationalizations are clearly based on discrepancy theory:

$$JS = \sum_{\text{facets}} (\text{Should Be} - \text{Is Now})$$

$$JS = \sum_{\text{facets}} \text{Importance} (\text{Should Be} - \text{Is Now})$$

The seven operationalizations provided a possibility of testing the construct validity of job satisfaction.

The items were designed very much in accordance with the short form of the Minnesota Satisfaction Questionnaire (Weiss et al., 1967). In addition to the 20 subvariables of the short-form questionnaire, the researcher added five items related to satisfaction with: job challenge, public image of the organization, consistency between personal goals and organizational objectives, opportunity for internal socialization, and opportunity for leisure and entertainment in the organization or local community. Preliminary interviews indicated that these five aspects of job satisfaction were important for one's satisfaction at work, particularly in higher education institutions. All in all, 25 items constituted the job satisfaction index.

4. Operationalization of job performance. Three items were designed to provide a self-rated measure of job performance: quantity of work, quality of work, and overall job performance. A Likert scale with a nominally defined scale interval was used: "very much below average," "much below average," "slightly below average," "average," "slightly above average," "much above average," and "very much above average." A single measure (one item only) of job performance has been found to provide results similar to composite measures (Lawler, 1967). However, by splitting this variable up into a quantitative aspect, a qualitative aspect, and an overall judgment, the separate aspects of performance could each be investigated separately as well as the composite variable. Whether this distinction between a single measure and a composite measure is culturally important needs specific investigation.

5. Demographics. Demographic variables constituted the final part of the questionnaire. Background variables directly related to the stated hypotheses were age, marital status, sex, educational level, number of years worked in the organization, position level, and number of dependents the employee had to support financially. These variables were regarded as important control variables as well as potential correlates of job satisfaction and performance. Therefore, the demographic variables were used in the statistical analysis to test some of the stated hypotheses. ✓

The variable "educational level" was designed as six categories: (1) second degree (Ph.D., master's degree, etc.); (2) primary degree (B.A., B.Sc., etc.); (3) diploma (at least a one-year course), technical

college, teacher training college, etc.; (4) Form VI; (5) Form IV; and (6) primary school. In controlling for this variable in the further analysis, two-and-two successive categories were merged to form three broader educational levels or categories.

The variable "position level" was designed as five categories: (1) top management, department head, etc.; (2) middle management, senior position; (3) lower management, not senior position; (4) supervisor, foreman, secretary, higher clerk, etc.; and (5) worker, lower clerk, etc. In controlling for this variable in the further analysis, the two first and the two last categories were merged to form three position levels or categories.

The variable "number of years worked in the organization" was designed as three categories: (1) four years or less, (2) 5-12 years, and (3) more than 12 years.

The variable "number of dependents the employee has to support financially" was designed as four categories: (1) none, (2) 1-3 persons, (3) 4-8 persons, and (4) more than 8 persons. The first two categories were merged in the further analysis. Very few wage- or salary-earning employees do not have any dependents.

Supervisors' ratings of job performance.--Another instrument (short questionnaire) was aimed at eliciting supervisors' ratings of employee performance. The same written item-design as described under Operationalization of Job Performance was administered to the immediate supervisors of all employees who responded to the major questionnaire. Previous research (Lawler, 1968) has shown that a supervisory rating is more valid than self-ratings of performance, in terms of convergent

validity--the degree to which there is agreement among independent measures of the same construct. If there is good agreement among different supervisors in rating the same employee's performance, convergent validity exists. Likewise, if there is good agreement between self-ratings and supervisory ratings of job performance, convergent validity exists.

Ratings of organizational climate by an external consulting firm.--A third instrument was designed to elicit external consultants' ratings of organizational climate. In designing the evaluation format of organizational climate for the external consulting firm, the 10 subvariables were defined in the same way as they were for the organizational climate index. Only the subvariables, not the 89 climate items, were rated. Nine consultants rated the subvariables on the same type of Likert scale and with the same (a) and (b) questions as used for the individual respondents from the eight organizations. An example of item design follows:

Degree of structure: "The degree of constraints in the organization: How many rules, regulations, and procedures there are, the degree of emphasis on bureaucracy and going through channels, the degree to which the organization specifies and codifies, and the extent to which there is a strict and formal atmosphere."

	<u>EL</u>	<u>VL</u>	<u>L</u>	<u>N</u>	<u>M</u>	<u>VM</u>	<u>EM</u>
a. How much is there now?	1	2	3	4	5	6	7
b. How much should there be?	1	2	3	4	5	6	7

The definitions of "is now" and "should be" were the same as in the questionnaire for employee ratings of climate. In addition, the consulting firm was asked to rate the overall organizational climate on a seven-point scale. This external rating approach to measuring

organizational climate may serve to validate individual perceptions of the climate variables, and vice versa. If the two measures of the same construct or latent trait agree with each other, greater confidence can be attribute to the employee-perceived measure of organizational climate in the further analysis of the data. In investigating relationships between organizational climate and other variables, the employee-perceived climate measure was used.

The administrative procedure for obtaining consultant ratings was as follows: The researcher arranged a personal meeting with the director of the consulting firm and discussed whether the firm's consultants would be able to rate various aspects of organizational climate in eight organizations. It was learned that most of the consultants were knowledgeable about the climate in seven of the eight organizations. The consulting firm was willing to perform a climate rating of these seven organizations, and the director of the firm agreed to administer the questionnaire. The climate of the eighth organization was rated only by the employee respondents.

Data-Collection Procedures

The writer worked as an expatriate researcher and management trainer/teacher at the Institute of Development Management (IDM) in Morogoro, Tanzania, from 1975 to 1978. Early in 1977, a preliminary outline of this research was presented to the Subject Panel for Public Administration and Management at IDM. The subject panel approved the research proposal and forwarded it to the Institute's Research and Consultancy Committee. This committee approved the research proposal,

granted the necessary monetary means for carrying out the research, and forwarded the research proposal to the Tanzania National Scientific Research Council in Dar es Salaam. At the end of 1977, the council granted final permission to conduct the research.

Preliminary studies were briefly described in the Instrumentation section of this chapter. Based on those studies and the research literature available at the time, the first draft of the survey questionnaire was discussed among colleagues at IDM. Several suggestions of adding items, dropping items, and rewording phrases resulted from this first informal "trying out" of the questionnaire. The possibility of translating the items into Swahili was discussed, and the principal of the institute agreed to try devising a Swahili edition of the questionnaire. This, however, proved to be a difficult task because there existed no Swahili words or expressions that fully covered the intended meaning of some of the items. In these instances the connotation would have been changed, and an appropriate translation back to English would have been necessary. Therefore, it was finally decided to continue with the English version of the questionnaire and to delete the most difficult or noncustomary organizational/management vocabulary.

The revised draft of the questionnaire was then tested on a representative sample from three of the respondent organizations. Each organization provided the researcher with a list of all employees who satisfied the criteria for being members of the defined population. (See Definition of Population.) Then a systematic sample of 20 to 40 respondents in each of the three organizations was selected to comment on and answer the questionnaire. This preliminary testing of the

questionnaire resulted in a few changes in the formulation of items. It seemed unnecessary to test the questionnaire further on a second sample of respondents.

The general manager of each organization sent employees in the sample a written message, requesting that they answer a research questionnaire designed and administered by a researcher from the Institute of Development Management at Mzumbe, Morogoro. The questionnaire was administered to all respondents in the sample from each organization by gathering all respondents together in one room. It is difficult to judge how this request, which was in the nature of an assignment, affected the respondents' honesty and seriousness in answering the questionnaire. At any rate, 90% or more of the sample in each organization met in the assigned room and answered the questionnaire.

The researcher explained the purpose of the research and how to answer the questions. The respondents were assured that no person in the organization would be allowed access to the individual data; only the researcher would see and analyze the responses. The respondents were further informed that managers of the organization would only be allowed to see the average results for the whole group, not the individual responses. Based on this assurance of confidentiality, the respondents were encouraged to respond in an honest and authentic way.

The researcher believes the necessary trust and confidence existed. The level of trust was probably higher than it would have been if local persons had assisted in administering the questionnaire. The respondents seemed motivated to work seriously and did not seem afraid to answer questions according to their best judgment or honest opinion.

The researcher worked orally through two examples of how to answer questions (a), (b), and (c) within each item. These examples were also included in the questionnaire as a means of pre-response training to ensure that all the respondents understood the triple question related to each item-stimulus. Explaining the purpose of the research, informing respondents about the confidentiality of the research, working through the two examples, responding to feedback, and building the necessary rapport, trust, and confidence took 15 to 20 minutes.

The respondents were allowed to call upon the researcher during their work with the items to clear up ambiguities or any other difficulties that arose. Many respondents took advantage of this opportunity. They seemed to work seriously with the items. The average time needed to answer the questionnaire was about 90 minutes.

Supervisors' ratings of job performance were obtained in a separate session within each organization. The researcher distributed the rating forms (with a ratee name on each form) to each supervisor and collected them later the same day. The supervisors were assured of confidentiality and that only the researcher would examine the data. Basically, the same assurances and information were given to the performance raters as to the questionnaire respondents.

The administration of the organizational climate instrument to the nine external consultants was done by the director of the consulting firm himself. Both the evaluation format and the administrative procedure were described earlier in this chapter.

The Sampling Procedure

Definition of the Population

The population comprised two types of organizations: higher education organizations and production firms. The original purpose was to conduct a study solely within higher education institutions. However, to increase the generalizability of the findings and to allow comparison between types of organizations, the most common types of organizations--production firms--were also included. Even though these two types of organizations are essential in the Tanzanian culture, they do not constitute a representative sample of Tanzanian organizations. Therefore, strictly judged, one cannot generalize the findings to other than higher education organizations and production firms. However, these two types of firms constitute a substantial part of the total number of organizations in the Tanzanian society. Because production firms outnumbered higher education institutions, it was decided that about two-thirds of the organizations selected should be production firms, and about one-third should be higher education institutions. Taking time and cost limitations into account, it was finally decided to select three higher education organizations and five production firms as respondent organizations.

The three major criteria for selecting organizations were as follows:

1. Organizations from two or more geographical areas.
2. A variety of types of production firms and higher education organizations.

3. Organizations that a priori were judged to be very successful, somewhat successful, or not successful in terms of productivity and stability.

The researcher as well as colleagues in the field of higher education and management judged these criteria to be important in securing a sample of organizations that was fairly representative of the organizational population: production firms and higher education organizations. The term "stability" in the third criterion was not interpreted as noninnovative or status-quo, but as a good and innovative work atmosphere, seemingly satisfied people, and little destructive unrest and conflict. Selection of organizations on the basis of this third criterion was done primarily by experts at the Institute of Development Management (IDM) in Tanzania. The respondent organizations were selected from three different geographical areas: the urban capital area, a medium-large town, and a rather rural area.

One of the production organizations manufactured tires and tubes for all types of vehicles except bicycles. It was the only tire and tube manufacturer in Tanzania and hence was in a monopoly situation. The general educational level required for workers in the production departments was seven years of primary education (Standard VII), and for supervisors (first-line foremen) four years of additional secondary education (Form IV). Technical requirements were skills in operating the machine; for supervisors, additional skills and supervisory capability were necessary. Another company manufactured batteries, radios, cassette recorders, and other electrical products. The general educational level among workers and supervisors was minimum Standard VII.

Workers had to undergo technical job training with job rotation as well as "sandwich" courses external to the factory. Supervisors had a National Technician Certificate. In the battery department, a traditional assembly line existed. A third company had as its major products concrete blocks and furniture. The general educational level varied considerably, but most of the workers and supervisors had Standard VII. Supervisors had additional technical and/or supervisory training. The fourth production firm manufactured radios, recorders, and other electrical equipment. The general educational level varied from Standard VII to Form IV for most of the workers and supervisors. Technical-skills requirements were high, particularly for supervisors. Many had a National Technician Certificate and additional on-the-job training. The fifth firm manufactured cement. The general educational level among workers and supervisors varied considerably, as did the technical training and skills.

Workers and supervisors had, as a whole, the lowest general education in all five production firms. Employees in the office or administrative departments usually had higher general education than the workers in production departments. As will be described later, very few workers satisfied the stated criteria for being a member of the defined population.

The three higher education organizations were related to management training or related subjects such as accountancy, economics, and rural planning. One of the organizations also did extensive consulting work in production organizations in addition to teaching, training, and research. The educational level in these organizations was in

general much higher than in production firms. A great number of the employees had a university degree. Even in the administrative departments, the educational level was higher than in similar departments of the production firms. Because these organizations were professional educational institutions, partially within organization and management, one would presume that they emphasized developing enriched job content and context, innovative and work-motivating organizational climates, and reward systems that promote both job performance and job satisfaction. A comparison of the job satisfaction levels in the two types of organizations is contained in Chapter IV. Furthermore, the organizational climates of all eight organizations are analyzed and compared. The relationships among job characteristics, organizational climate, job satisfaction, and performance are also investigated and compared for the two types of organizations.

The fact that two types of organizations were investigated, and that they were different, may lead to the conclusion that two populations existed. However, the same criteria for selection of respondents were used for both types of organizations. These criteria functioned as determinants of which elements belonged to the population universe. Therefore, only one population with the following common characteristics existed:

1. Only individuals with at least nine years of education.
2. Only individuals who could understand English fairly well, in order to answer the survey questionnaire.

3. Only individuals employed at least one-half year in the organization.

4. Only Tanzanian citizens.

The second criterion was an ambiguous one. The required knowledge of English was discussed with the contact persons in each organization (general manager, personnel manager). The point was to apply this criterion in the same way in all the organizations--that is, to interpret "fairly well" consistently. To help set the minimum standard for "fairly well," the difficulty of understanding typical items included in the survey was discussed with the contact persons in each organization. Furthermore, to approach a common, set standard of English proficiency, four years of formal education in English or its equivalent was regarded as understanding English "fairly well." Within this frame of reference, and based on the above-stated criteria, each organization decided who could be a member of the population. This may have biased the sample to some extent. A profile of the demographic variable "educational level" may indicate the amount of such bias by finding what percentage of the sample was in the lowest educational category for each organization. However, it was evident from the population lists that very few workers (skilled, semi-skilled, or unskilled) satisfied the criteria for being a member of the defined population. First-line foremen and lower- to middle-level clerks constituted the majority of respondents at the lower end of the educational scale. Based on the stated criteria, each organization generated a list of individuals by name, in alphabetical order. These lists constituted the defined population.

Sampling Method and Procedure

Every second element (individual) was selected from the listed population of elements; that is, the sampling fraction was 1:2. Whether the first population element should be selected or not was determined randomly. This provided a systematic, deterministic sample.

The alphabetical population lists of individuals could be regarded as a pseudo-random ordering of the population elements. Furthermore, the sampling fraction was rather large (1:2). These two conditions, pseudo-random ordering and large sampling fractions, together make it quite likely that the samples were representative of their respective larger sets.

The sample was not a probability sample. Even though all possible samples of elements had known probabilities of being selected, some of the probabilities were zero, which a probability sample cannot have. Once the sampling fraction was determined, the random selection of a starting point determined the whole sample.

Table 1 shows the response frequency in each of the eight organizations. In six of the eight organizations, the response frequency was 90% or higher. This means that 90% or more of the respondents answered the questionnaire more or less completely. One reason for this high response rate was that the respondents in six of the organizations were assigned this task. In two organizations, the respondents were given the questionnaire individually because it would have been impractical to gather together all the respondents at the same time. In these two cases, the response frequencies were 71% (educational organization No. 2) and 78% (educational organization No. 3). Totally, the

sample constituted 379 people, and the number of actual respondents was 336. This provided a response frequency of 89% for the total sample, which was satisfactory.

Table 1.--Sample size and relative response frequency for each organization.

Organization	Sample Size	Actual Respondents	Response Frequency (%)
Prod. firm No. 1	37	34	92
Prod. firm No. 2	74	70	95
Prod. firm No. 3	51	46	90
Prod. firm No. 4	55	53	96
Prod. firm No. 5	36	34	94
Ed. organization No. 1	19	18	95
Ed. organization No. 2	38	27	71
Ed. organization No. 3	69	54	78
Total	379	336	89

Statistical Methods of Analysis

Factor Analysis of Organizational Climate and Job Characteristics

Factor analysis is a statistical method for determining the number and nature of the underlying variables among a large number of measures. These underlying variables are statistically independent variables when orthogonal rotation is used. Kerlinger (1970) stated that factor analysis is "a method for extracting common factor variances from sets of measures" (p. 650). A factor is a hypothetical construct that is assumed to underlie a set of measures or a test. In applying factor analysis on, for example, organizational climate, two

basic questions must be answered: How many underlying factors or sub-variables of organizational climate exist? and How are these factors to be conceptualized and described?

In factor analysis, the reference axes in the factor space are arbitrary. Therefore, they must be rotated in order to get a correct "picture" of the variables in the n-dimensional space (e.g., $n = 87$ for organizational climate). The orthogonal varimax rotation method was used. Furthermore, an R-factor analysis was used because the correlations were between pairs of variables, not between pairs of individuals. Therefore, the researcher decided to use the R-type factor analysis, the principal factoring with iteration, and the orthogonal varimax rotation methods.

Statistical Methods for Testing Hypotheses 1a Through 15

To describe the relationship among variables, simple correlations were used. Once these relationships were described, other methods were used to test the remaining hypotheses.

If one assumes interval data, Pearson product-moment correlation can be applied. Strictly judged, the data are ordinal, but the kind of Likert scale used in this research is often treated as an interval scale. In this study, Pearson correlations were used as zero-order correlations between major variables, between demographic variables, and their interrelationships.

Pearson correlation analysis was used to test Hypotheses 2, 3a, 3c, 3d, 4, 5, 8, 9, 10, and 11.

Hypothesis 1a was tested by Spearman rank-order correlation.

Hypotheses 1b and 6 were tested by the intraclass correlation method.

Hypotheses 3b and 7 were tested by t-tests. To test the former hypothesis, a t-test for paired observations was used.

Hypotheses 12, 13, and 14 were tested by analysis of variance (two-way ANOVA). Analysis of variance was also used to test the additivity assumption underlying path analysis.

Hypothesis 15 was tested by a particular path analysis based on analysis of linear structural relationships of covariance matrices.

Path Analysis: A Linear Structural Analysis of Relationships

Correlation is not causation! This mantra of traditional scientific inference has been challenged by the growing acceptance of various multivariate data-analysis techniques, especially path analysis and econometrics (Young, 1977).

To test Hypothesis 14 (the causal direction between job satisfaction and performance in the four-variable pattern of job characteristics, organizational climate, job satisfaction, and job performance), a modified model of path analysis in the form of an analysis of linear structural relationships was used.

In the 1970s, path analysis gained increased momentum as a statistical technique in the social sciences. Path analysis is a special type of multivariate analysis that deals with a closed system of variables that are assumed to be linearly related. It allows researchers increased confidence in making causal inferences from correlational data. The relationships among the actual set of variables are put into a multivariate causal context. The path analysis that is

based on structural analysis of covariance matrices. worked out by Karl Jöreskog (1974) uses the "maximum likelihood" method in testing for significance. This method was used in the present research. In general, path analysis can test a number of alternative causal sequences against one another. Path analysis can also be used to test an a priori causal hypothesis with a set of observed correlations.

Path analysis was originally introduced by Wright (1921, 1960, in SPSS manual), but Duncan (1966, in SPSS manual) popularized the technique for use in the social sciences. In the 1970s, several theoretical investigations into path analysis were conducted (Billings & Wroten, 1978; Nygreen, 1971; Young, 1977), as well as empirical research to test causal relationships within the area of organizational behavior (Boyle, 1970; Oliver, 1977; Sims & Szilagyi, 1975).

The validity of an a priori hypothesis can be tested by the regression coefficient obtained when a variable in the total pattern of variables (the model) is regressed on all variables hypothesized to be antecedent to this variable. The standardized partial regression coefficient is the same as the standardized beta weight or path coefficient. This coefficient represents the degree of causal influence. A path analysis diagram showing the interrelationships of the variables is used to facilitate the application and understanding of this technique. Path analysis explains empirical findings in terms of the causal processes the researcher has hypothesized, rather than examining bivariate relationships.

Several assumptions underlie this technique: uncorrelated residuals, one-way causality, linearity, additivity, interval measures,

and the problem of multicollinearity (Billings & Wroten, 1978). If the first assumption is not met, the size of a path coefficient may be over- or underestimated.

The second assumption, one-way causality, is based on theoretical evidence. Even though previous research has not shown a consistent direction of causality in the four-variable system of job characteristics, organization climate, job satisfaction, and job performance, there are theories of causality. And one can always test alternative causal patterns of variables to find the strongest causal direction among the endogenous variables (a recursive model). Exogenous variables are caused by variables outside the system. Therefore, these variables may be allowed to cause each other reciprocally. Social systems often have feedback loops that are interpreted as reciprocal causation. Path analysis can be used to test such circular models, but data then have to be collected at different times. Most feedback loops (circular processes) hypothesize that X at time t_1 affects Y at time t_2 , which affects X at time t_3 .

If variables are not related in a linear way, there is a possibility of incorrect causal inference. If two variables are related in a curvilinear way, the path coefficient may be zero, leading to the wrong conclusion that there is no effect of one variable on the other. If the researcher has a hunch about nonlinearity, he/she can test for significant nonlinear relationships by computing the correlation ratio, eta squared.

The additivity assumption means that there are no significant interaction effects. If, for example, job content and organizational

climate interact in affecting job satisfaction, then causal inference based on path analysis may be incorrect. If interaction is found, special interaction terms can be applied in the path analysis model (Nygreen, 1971).

Strictly speaking, the assumption that the data are measured at the interval level is not met when using a Likert-type scale. However, the consequences of assuming interval data from a Likert scale do not seem severe. Boyle (1970) discussed the use of path analysis on ordinal data. He argued that the nonequality of intervals must be great before problems result. In the present research, since there were five intervals on the scale and since multiple items were used, the data probably had sufficient interval properties.

The problem with multicollinearity has to do with the intercorrelations among the variables. If job characteristics and organizational climate affect job satisfaction, their effects on job satisfaction can easily be separated if they are completely orthogonal. In this case, path analysis loses its value. If the variables job characteristics and organizational climate are correlated, it becomes more difficult to separate their effects on the third variable. In this case, path analysis is more useful because the implications of the different causal models relating job characteristics and organizational climate to job satisfaction can be evaluated using the data (Billings & Wroten, 1978). If, however, job characteristics and organizational climate are highly correlated, we have a condition called multicollinearity. Under such a condition, it may be extremely difficult to separate the effects of job characteristics and organizational climate. Researchers have

shown quite clearly that no strong correlation exists among the four major variables included in the present research. The problem with multicollinearity is that the standard error of the regression weight is large, making it difficult to reject the null hypothesis that the regression weight is zero. To reduce the problem of multicollinearity, Billings and Wroten suggested five partial solutions: (a) a large sample size will reduce the standard error (Heise, 1975, p. 187); (b) replicate the study with a different sample (Cohen & Cohen, 1975, p. 116, in Billings & Wroten, 1978); (c) highly correlated variables that are similar should be combined into one measure of a broader concept; (d) the intercorrelated variables may be treated as a block (Namboodire, Carter, & Blalock, 1975, pp. 526-530, in Billings & Wroten, 1978); and (e) delete the variable(s) of least interest, which, however, may violate the assumption of uncorrelated residuals.

In the present study, variables were measured at one time. If, however, the variables had been measured at different times, simple correlations, cross-lagged correlation, and path analysis would complement each other. In path analysis, one major assumption is that an observed correlation is not caused by some unmeasured third variable. Billings and Wroten (1978) stated that this assumption can be checked using cross-lagged correlation, given that data are available at different times. If one has found a nonspurious causal relation, path analysis can be used to determine the relative size of all direct and indirect effects. In this research, the following applications were studied:

1. Simple zero-order correlation to establish a relationship.
2. Linear structural analysis (path analysis) to put the statistical relationships in a larger causal network.

Such a structural analysis cannot really prove causality. What it can do is to allow the researcher to estimate the degree of consistency between a hypothesized causal model and the available research data.

The ordinary model of path analysis, as described and programmed in the SPSS manual for social science, was not chosen because there is no adequate way of testing the results for statistical significance. In addition, there are too many assumptions, some of which may not be met to the necessary degree. Instead, a kind of path analysis similar to the structural analysis of covariance matrices worked out by Karl Jöreskog at the University Institute of Statistics in Uppsala, Sweden, was used (Jöreskog, 1974; Scott, 1976). The complete model consists of a structural model and a measurement model. Because of the complexity of the model, only the structural model was used in this study. This means that no measurement model was tested. This analysis compares the model solution to the real data to see if the model fits the data. The difference is tested for significance by the "maximum likelihood" method. The result is given as a χ^2 value and its significance.

The model was applied on aggregated data only--that is, on latent traits or composite measures of the exogenous variables, job characteristics and organizational climate, and of the endogenous variables, job satisfaction and performance.

Two causal models, based on the latent traits or composite measures of the variables, were tested. A pictorial representation of these models is shown in Figure 2. In the ensuing description, these models are called Model A_1 and Model A_2 .

In both models, job characteristics and organizational climate are exogenous variables, and job satisfaction and job performance are endogenous variables. The causal structure among the exogenous variables is assumed unknown and unanalyzed; that is, the covariation may be causal or spurious. This means that the "ambiguous" covariation between job characteristics and climate is represented by the simple correlation between the two. This is illustrated on the model with a double arrow between the two exogenous variables. Given this model, it is not possible to determine the expected change in job satisfaction or job performance for a unit change in job characteristics because it is unknown whether changes in job characteristics would bring about changes in organizational climate. Hence, the total causal effect of job characteristics or organizational climate is undefined in the model.

The zero-order correlation coefficient between the exogenous variables is denoted r . In this structural model, path coefficients are estimated. The coefficients from the exogenous variables job characteristics and organizational climate to job satisfaction are γ_1 and γ_2 , respectively. The coefficients from the same exogenous variables to job performance are γ_3 and γ_4 , respectively. The coefficient between the two endogenous variables is β .

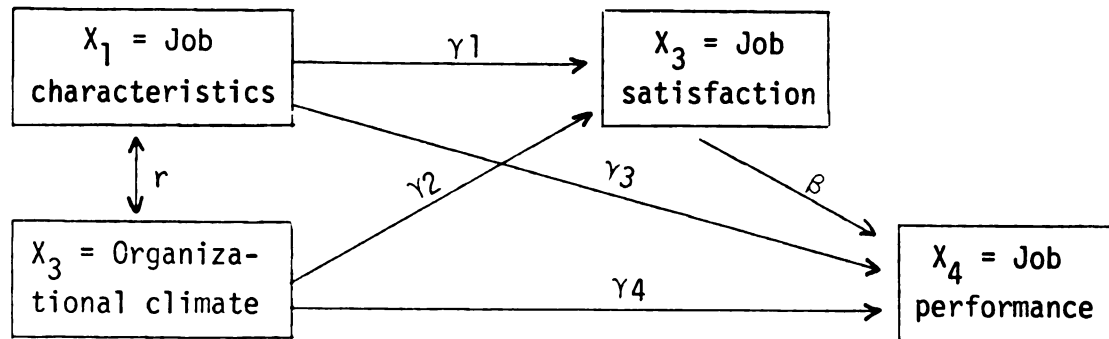
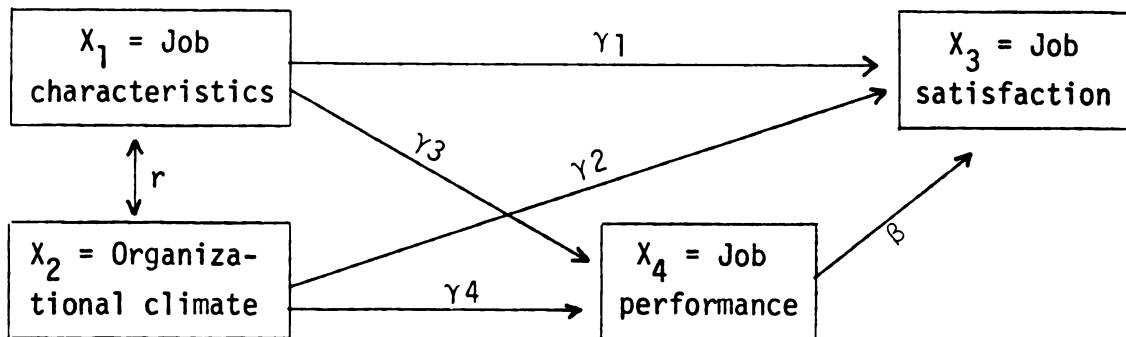
Model A₁:Model A₂:

Figure 2.--Causal direction from job satisfaction to job performance (Model A₁) and causal direction from job performance to job satisfaction (Model A₂).

When estimating the strongest causal direction in the pattern of variables, linear causal effect coefficients must be computed (SPSS manual, p. 384). Applied on Model A_1 , the coefficient for the effect of job characteristics on job performance is:

$$C_{1,4} = \gamma_3 + \gamma_1 \cdot \beta$$

The other effect coefficients related to Model A_1 are:

$$C_{2,4} = \gamma_4 + \gamma_2 \cdot \beta$$

$$C_{3,4} = \beta$$

$$C_{1,3} = \gamma_1$$

$$C_{2,3} = \gamma_2$$

By comparing the estimated effect coefficients $C_{2,3}$ for Models A_1 and A_2 , the strongest causal direction between the endogenous variables is found. The model in which $C_{2,3}$ has the largest value represents the best causal model.

CHAPTER IV

DATA ANALYSIS AND RESULTS

The first parts of the data analysis are devoted to measurement problems and results. Factor analysis was used to determine the number and types of underlying factors for each of the indices or major variables: organizational climate, job characteristics, and job satisfaction. The number of original items in the organizational climate index was 89, in the job characteristics index 20, and in the job satisfaction index 25. An item analysis across the three scales revealed that a few items had approximately the same wording. This would lead to a biased estimate of the correlation coefficients between two major variables containing equal or approximately equal wording of items (sub-variables). The correlation coefficient tends to increase with similar wording in the two indices (major variables), even though they are measured at different levels (organizational climate/job characteristics), or one variable is measured at an affective level and the other at a descriptive level (job satisfaction/organizational climate). This item analysis resulted in deletion of a few items from the indices.

In the final analysis, the following numbers of items were used, as compared to the original number of items in the questionnaire:

	<u>Original items</u>	<u>Items used</u>
Organizational climate index	89	87
Job characteristics index	20	18
Job satisfaction index	25	24

For example, the climate item, "The opportunity of independent thinking and action for people in your work group," was deleted because the job characteristics item, "The amount of independent thinking and action in your job," had approximately the same content. The climate item was deleted also because it was not organization oriented, but rather group oriented. Another example: The satisfaction item, "The opportunity to try your own methods of doing the job," was deleted because the job characteristics item, "The amount of freedom to do the work in your own way," had approximately the same content.

In finding the best factor structure of each index, the size of the eigenvalues is crucial but is not the sole criterion for determining the number of underlying factors. As an initial heuristic, the number of factors with eigenvalues larger than 1 is considered as the number of underlying factors. The size of the highest factor loading for a particular item, the relative size of the factor loadings for the same item (how factorially "pure" or complex it is), and judgment of how much it makes sense to group two or more items together as one factor should be considered along with the size of the eigenvalues to determine the factor structure that best represents the data. Thurstone developed five rules or "simple structure principles" to get as "pure" variables as possible. According to Kerlinger (1970), these rules are:

1. Each row of the factor matrix should have at least one loading close to zero.

2. For each column of the factor matrix there should be at least as many variables with zero or near-zero loadings as there are factors.

3. For every pair of factors (columns) there should be several variables with loadings on one factor (column) but not on the other.

4. When there are four or more factors, a large proportion of the variables should have negligible (close to zero) loadings on any pair of factors.

5. For every pair of factors (column) of the factor matrix there should be only a small number of variables with appreciable (non-zero) loadings in both columns.

These rules are applicable to both orthogonal and oblique rotation of the factor matrix. In summary, to get as "pure" factors as possible, each variable should load on as few factors as possible, and there should be as many zeros as possible in the rotated factor matrix.

Factor analyses of organizational climate and job characteristics were based on the "is now" operationalization discussed in Chapters II and III. Factor analysis of job satisfaction was conducted for both the "is now" and the discrepancy operationalizations.

Organizational Climate Measurements

Factor Analysis of Organizational Climate

According to the design of the climate index, 10 subvariables or aspects of organizational climate were considered in designing the items. In this particular factor analysis, it was necessary to run five analysis to find the best factor structure. Analyses based on 10, 8, 6, 4, and 3 factors of organizational climate were performed. The factor structure that best represented the data was a four-factor

orthogonal rotation, first of all because more than four factors did not result in all eigenvalues larger than 1.

The factor loadings and communalities for all items are shown in Appendix A. A factor loading expresses the correlation between a particular variable (item) and the factor to which the variable belongs. Factor loading represents the importance of the particular factor in the item concerned. A communality coefficient is the proportion of the total variance an item has in common with other items in a given correlation matrix.

Most of the organizational climate items were factorially "pure"--that is, loaded on only one of the four factors. However, some of the items had loadings on two of the four factors (and on three factors in a few cases), and therefore were more factorially complex. No items were deleted from the climate index for this reason. If the purpose of this research had been to refine an instrument for measuring organizational climate for a larger population, only those items that were highly "pure" factorially should have been included in the index. Each of the 87 items was included in one of the four underlying factors, the one on which the item had the highest loading. The four factors accounted for 33.9% of the total variance.

The questionnaire items belonging to each factor, factor loadings, eigenvalues, the percentage of total variance explained by the particular factor, the cumulative percentage of total variance explained, and the name and description of each construct or underlying factor are shown in Tables 2 through 5.

Table 2.--Factor 1 of the organizational climate index.

Item #	Items	Factor Loading
1	The degree to which most positions here are clearly defined, and their responsibilities and duties are clear to the position-holders	.31
3	The degree to which rewards and encouragements are used more than warnings and penalties in this organization	.41
5	The degree to which most superiors really know their jobs	.42
6	The degree to which formal communication goes both vertically (downwards and upwards) and horizontally in the organization	.39
11	The degree to which it is clear who has the formal authority to make decisions about matters relevant to the employees	.41
12	The degree to which superiors like that employees are checking every work detail with them	-.42
13	The amount of rewards people get in this organization	.57
18	The degree to which superiors appreciate that employees speak their minds, even if it means disagreeing with their superiors	.53
21	The degree to which organization policies and structure are clearly set down in writing	.33
22	The tendency of employees to make an effort to try things on their own sometimes	.34
23	The degree to which people are rewarded in proportion to the quality/quantity of their job performance	.60
25	The amount of professional knowledge management is using at work	.43
26	Amount of information from management as regards what is going to happen in the organization	.37
27	The degree to which decisions are made so that they satisfy individual needs as well as organizational requirements	.48
28	The tendency that the best way to make a good impression around here is to steer clear of open arguments and disagreements	-.28

Table 2.--Continued.

Item #	Items	Factor Loading
33	The degree to which people here get satisfactory rewards for their work	.68
34	Management's belief that there is always room for improvement (that is, management's belief that even the best employee could improve his own job performance)	.54
35	The degree to which people get help and guidance from superiors	.59
36	The amount of information people get through informal communication about work and organizational matters	.40
37	The amount of decision-making responsibility that is delegated to subordinates at varying levels in the organization	.57
38	The degree to which conflicts between groups or units are seen as healthy for the organization (healthy in the sense that conflicts do promote organizational change and development)	.39
43	Employees' opportunity of being promoted if their work reaches the required level or above	.62
44	The degree to which people are encouraged to continually improve their job performance	.53
45	The degree to which most superiors are friendly and warm in their relationships with subordinates	.53
47	The effectiveness of decision making in this organization	.41
55	The degree to which superiors make subordinates feel free to discuss with them important problems related to work	.63
58	The degree to which a subordinate can question with his superior when disagreement exists	.53
61	The degree to which superiors are concerned with informal groups and informal leadership in order to get the right people together to do the job	.36
63	The degree to which employees' recognition and reward relate to effort and achievement	.65
64	The contribution made by superiors in order to develop the staff for higher performance and more advanced tasks	.67

Table 2.--Continued.

Item #	Items	Factor Loading
66	The degree to which decisions are made at levels where the information and knowledge about the problem is highest	.34
72	The degree to which salary of people in my work group is commensurate (equitable) with responsibility and performance	.38
73	The degree to which superiors are willing to listen to subordinates' problems	.71
74	The willingness of the superiors to share information with subordinates relative to organizational matters	.54
78	The degree to which the objectives of all the departments (sections) are clearly set down in writing and clearly explained to all concerned	.47
80	The degree to which employees' pay is linked to job performance in this organization (that is, higher job performance results in higher pay)	.55
81	The degree to which superiors are using group meetings in order to get ideas and to discuss problems related to work	.52
82	The amount of free and open communication in and between different work groups	.52
86	The amount of encouragement and support this organization gives to individual initiative	.60

Factor name: Structural aspects of organizational climate

Factor description: Organizational structures and procedures, technical and human characteristics and structures of management, rewards and promotion structures

Eigenvalue: 17.6

Percentage of total variance explained by this factor: 19.7%

Table 3.--Factor 2 of the organizational climate index.

Item #	Items	Factor Loading
8	The amount of conflicts in this organization	.41
10	The degree of malmanipulation of people in this organization (pushing, conspiring, deflating the status of others, etc.)	.44
15	The tendency of superiors to ignore suggestions and complaints from the employees	.60
17	The grabbing of decision-making power by superiors	.47
19	The degree to which people wish to quit this organization	.51
24	The degree to which it is more important to get along with people than it is to be a high performer	.30
30	The degree to which people get advantages and privileges at work through making of personal friendship with important people in the organization	.50
41	The degree of bureaucratic procedures, rules, and administrative details that are put upon people	.46
46	The amount of communication which is accompanied by suspicion and distrust	.58
48	The degree to which superiors punish or take action against employees who take up potential conflicts for open discussion and resolution	.44
53	The degree to which the promotion system here is arbitrary to some extent built upon friendship and favoritism more than upon real qualifications and job performance	.50
57	The tendency of persons with decision-making power to make decisions biased by friendship and favoritism, and not according to objective criteria	.57
59	The amount of doubt and confusion about "where the organization is going" in the future	.52
62	The degree to which employees lose interest and tend to withdraw from a project or a job in which they are to participate	.50
65	The tendency of employees to "play their cards close to their chest" (that is, not to reveal how they actually think and feel)	.55

Table 3.--Continued.

Item #	Items	Factor Loading
67	The amount of unresolved conflicts in different work groups because people do not take up conflicts for open discussions	.63
69	The tendency of people in this organization to show a negative attitude when colleagues or subordinates are approaching them with a problem	.45
70	The amount of managerial levels in this organization (authority and salary levels from the top to the bottom)	.39
75	The tendency of superiors to make decisions without consulting those directly involved	.55
76	The amount of denial and suppression of conflicts in which employees are involved (not dealing with the conflicts, but ignoring them)	.50
77	The degree to which people around here are abusing the authority that is delegated to them	.47
79	The degree to which employees tend to stop work, and have breaks	.40
83	The degree to which major decisions here are influenced more by the status of the proposer than by the logic of the argument	.54
84	The amount of plotting against other people when they differ in opinion	.56
89	The degree to which the persons with the highest authority tend to enforce their views irrespective of other opinions	.53

Factor name: Freedom from supervisory arbitrariness and antisupervisory behavior

Factor description: Conflicts, abuse of decision-making power, favoritism and friendship, distrust, and plotting against people

Eigenvalue: 6.94

Percentage of total variance explained by this factor: 7.8%

Cumulative percentage of total variance explained: 27.5%

Table 4.--Factor 3 of the organizational climate index.

Item #	Items	Factor Loading
16	The degree to which the formal communication is regarded as good	.31
20	The degree to which people accept each other	.33
29	Employees' loyalty to this organization	.30
32	The degree to which people in your group (department, section) are willing to take the consequences of their own mistakes at work	.29
39	The willingness to work toward the achievement of organizational objectives	.45
40	The amount of confidence and trust people have in each other	.58
42	The amount of control that is available to superiors as regards work of subordinates	-.31
49	Employees' feeling of personal involvement in work	.37
50	The degree to which people sincerely care for and are considerate to each other	.63
51	The degree to which people are quite sure who is their immediate superior	.48
54	The degree to which people have to work hard in order to keep up with the agreed work load	.45
56	The amount of cooperation and communication among people at the same level (same rank) as regards work	.54
68	Employees' acceptance of organizational values, policies, and objectives	.58
71	The degree to which people in this organization just go ahead with their work if they think they have got the right approach	.36
85	The degree to which rules and regulations restrict people in their work	-.26

Table 4.--Continued.

Item #	Items	Factor Loading
87	The amount of communication among employees in your work group on how they are performing toward stated targets	.55
88	The degree to which people at all levels in this organization feel that their opinions and views have some influence on the decisions made by their immediate superior	.39

Factor name: Climate for interpersonal relations

Factor description: Communication and cooperation, trust and confidence, work involvement, individual freedom, organizational loyalty

Eigenvalue: 3.32

Percentage of total variance explained by this factor: 3.7%

Cumulative percentage of total variance explained: 31.3%

Table 5.--Factor 4 of the organizational climate index.

Item #	Items	Factor Loading
2	The degree to which people in this organization accept responsibility	.26
4	The degree to which the organization is concerned if employees perform below the work standard	.40
7	The degree to which people can influence their own work situation	.25
9	The pride of belonging to this organization	.44

Table 5.--Continued.

Item #	Items	Factor Loading
14	The degree to which this organization has set up high but realistic standards of performance	.47
31	The degree to which work is programmed and planned in this organization	.48

Factor name: Climate for demanding but realistic work standards

Factor description: Performance standards, work planning, employee influence on own work situations, and acceptance of job responsibility

Eigenvalue: 2.31

Percentage of total variance explained by this factor: 2.6%

Cumulative percentage of total variance explained: 33.9%

Comments on the factor analysis of organizational climate.--

Factor 1 of organizational climate dealt primarily with structures and structural constraints, including reward structures and promotion structures or systems. In addition, this factor also consisted of managerial characteristics and structures of management. The existing management is a strong intraorganizational force affecting all interfaces, such as the training and development interface and the compensation interface. As such, management characteristics seem to represent a relatively stable force or structure that provides both direction to and constraints on employees' activities. A large proportion of the items belonging to this factor dealt with management, its technical and

human qualities, and leadership climate for solving various problems, such as conflicts, providing necessary information, and so on.

Factor 2 dealt with freedom from supervisory arbitrariness and employees' antibehavior as regards supervision. It was the ethical climate dimension. Based on content analysis of the items, this factor was relatively easy to interpret. A large proportion of the 25 items belonging to this factor concerned moral aspects, such as abuse of position power, malmanipulation of employees, nepotism, favoritism, negativism, lack of responsibility, plotting, and conspiracy. A few items did not seem to fit well into this pattern, such as #59, #67, and #70. But as a whole, the items fitted nicely into an ethical dimension.

Factor 3 dealt with interpersonal relations in which communication, cooperation, and trust and confidence were major aspects. Nearly all the items reflected the effectiveness of formal and informal communication and cooperation. The factor, then, was easy to interpret as a single climate dimension. However, items #51, #54, and #85 did not seem to fit well into this factor pattern. The last of these items concerned rules and regulations that restrict people in their work, and this restriction is probably related to the kind of cooperation and interpersonal relationships that develop in the work setting. As such, item #85 fitted into this factor pattern.

Factor 4 was relatively difficult to interpret. Many of the six items belonging to this factor reflected work standards: performance standards, job responsibility, and job programming and planning. Item #9 seemed not to fit well into this dimension in terms of content, and the items also had loading (.35) on Factor 1. Item #7 was related to the

job context, but it could be interpreted as employees' influence on their own work and work standards. The factor loading was rather low, and only slightly larger than the loading (.24) on Factor 1. The item could also be interpreted into Factor 1.

All in all, the factors of organizational climate could be given a reasonable interpretation in terms of a content analysis of the factor items. When comparing the 10 original predesigned subvariables of organizational climate and the four subvariables (factors) resulting from the factor analysis, the following was found: The original subvariables, structure, rewards, decision making, and partially management quality and responsibility, roughly constituted Factor 1: "Structural aspects of organizational climate." The original subvariables, conflict, interpersonal morals, and partially management quality, roughly constituted Factor 2: "Freedom from supervisory arbitrariness and antisupervisory behavior." The predesigned subvariables, communication, identity, and partially responsibility, roughly constituted Factor 3: "Climate for interpersonal relations." Finally, the predesigned subvariable, standards, and single items from structure, responsibility, decision making, and identity, constituted Factor 4: "Climate for demanding but realistic work standards." The factor analysis showed that it was necessary to conceptualize broader climate aspects than the predesigned subvariables of climate.

Intrascale Reliabilities

The internal consistency among the items within each of the four climate factors, that is, the intrascale reliabilities, was

measured with Cronbach's alpha. Table 6 shows these reliabilities. The intrascale reliabilities were high. The items within each scale showed good internal consistency; hence an assurance exists that the items within each scale were measuring consistently what they were measuring. This was particularly true for the first two scales in the table.

Table 6.--Intrascale reliabilities of organizational climate.

Subvariable	No. of Items	No. of Respondents	Cronbach's Alpha
Structural aspects of organizational climate	39	254	.94
Freedom from supervisory arbitrariness and autisupervisory behavior	25	254	.90
Climate for interpersonal relations	17	254	.75
Climate for demanding but realistic work standards	6	254	.67

Ratings of Organizational Climate
by Employees and by an External
Consulting Firm

The content of Hypothesis 1a dealt with the accuracy of employee-perceived organizational climate. Guion (1973) discussed the problem of construct validation of employee-perceived climate. Pritchard and Karasick (1973) used external consultants' agreement as a criterion against which to compare employee perceptions of organizational climate.

In the present research, both employee-perceived measures of climate aspects and ratings by an external consulting firm were

obtained. On each climate subscale, the same Likert scale was used for both employees and external consultants. Unfortunately, only the average of the consultants' ratings for each subvariable was reported. Therefore, only means, rankings, and rank-order correlations could be computed. The number of consultants varied from four to seven for each organization rated. The consultants rated only seven of the eight organizations because they did not possess intimate knowledge of the eighth firm. In addition to climate aspect measures, the consultants also rated the overall climate of each organization. The weighting problem could have been accounted for in such an overall assessment of organizational climate. Tables 7 and 8 show the data and the rank-order analysis.

When the composite measure of organizational climate was used, there was moderately high agreement between employee-perceived and consultants' ratings. (See Table 8.) When the composite climate measure of employee ratings and the overall climate measure of consultants' ratings were compared, there was moderate to high agreement between the two ratings of climate. Considering the climate means of the organizations, the differences were organization-specific and not a result of differences in organization type. That is, climate means for some of the production firms overlapped climate means for some of the higher education institutions. For example, considering employee-perceived climate, production firm No. 4 had the highest-valued organizational climate, whereas production firm No. 2 had the lowest-valued climate among the production firms. Furthermore, higher education organization No. 7 had the next-highest-valued climate, whereas

Table 7.--Ratings of organizational climate by organization members and external consultants.

	Ratings by	Struc- ture	Respon- sibility	Rewards	Stan- dards	Mgt. Qual.	Com- munic.	Decision Making	Con- flict	Ident.	Interp. Morals
Org. No. 1 ^a	Employees Consult.	3.81 5.00	4.04 4.00	3.02 3.00	3.61 4.00	3.48 4.00	3.76 3.00	3.74 3.00	3.93 3.00	3.61 4.00	3.95 3.00
Org. No. 2	Employees Consult.	3.57 4.00	3.88 4.00	2.76 3.00	3.61 5.00	3.21 4.00	3.48 4.00	3.38 4.00	3.55 4.00	3.50 5.00	4.07 4.00
Org. No. 3	Employees Consult.	4.03 5.00	3.94 5.00	3.27 4.00	4.12 6.00	3.35 5.00	3.72 5.00	3.59 3.00	3.93 3.00	4.08 6.00	4.14 4.00
Org. No. 4	Employees Consult.	4.16 4.00	3.10 5.00	3.76 4.00	4.73 6.00	4.40 5.00	4.19 4.00	4.00 3.00	4.01 3.00	4.51 6.00	4.19 4.00
Org. No. 5	Employees Consult.	4.04 6.00	3.90 4.00	3.61 5.00	4.21 6.00	4.12 5.00	3.92 5.00	3.74 4.00	3.90 3.00	4.08 6.00	4.21 4.00
Org. No. 6	Employees Consult.	3.82 4.00	3.98 5.00	3.50 2.00	4.16 4.00	4.10 4.00	3.93 3.00	3.72 4.00	3.98 4.00	4.03 5.00	4.18 5.00
Org. No. 7	Employees Consult.	4.00 4.00	4.24 5.00	3.52 5.00	3.70 5.00	4.00 5.00	4.02 4.00	4.09 5.00	3.99 4.00	3.83 6.00	4.25 5.00
Org. No. 8	Employees	3.55	3.62	2.91	3.29	3.30	3.46	3.18	3.53	3.54	3.58

^aOrganizations No. 1 through No. 5 were the production firms; organizations No. 6 through No. 8 were the higher education organizations.

Table 8.--Ranking of organizational climate in eight organizations according to ratings by employees and external consultants.

Org. No.	Rating by	N of Cases	Composite Climate	Overall Climate	Ranking of:		
					Composite Climate		Overall Climate
					Consult.	Employees	Consult.
Org. No. 1	Employees Consultants	34	3.70 3.60	3.00	7	6	7 (7)
Org. No. 2	Employees Consultants	69	3.49 4.10	4.00	5	7	6 (4)
Org. No. 3	Employees Consultants	47	3.80 4.60	4.00	3	5	5 (5)
Org. No. 4	Employees Consultants	53	4.18 4.40	5.00	4	1	1 (3)
Org. No. 5	Employees Consultants	34	3.95 4.80	5.00	2	3	3 (1)
Org. No. 6	Employees Consultants	18	3.92 4.00	4.00	6	4	4 (6)
Org. No. 7	Employees Consultants	27	3.97 4.80	5.00	1	2	2 (2)
Org. No. 8	Employees	54	3.39			8	

education organization No. 8 had the lowest-valued organizational climate among all eight organizations. Therefore, the climate differences were organization-specific.

The ranks were analyzed further by using Spearman rank-order correlations. Because the consultants also used a Likert scale with seven intervals for the overall assessment of climate, some of the organizations received the same mean. The figures in the last column of Table 8, therefore, reflect two ways of breaking a tie between ranks:

1. The interpretation of the ranking that provides the most conservative estimate of the difference between the ranks resulting from consultants' ratings of overall climate and employee ratings computed as a composite measure (highest correlation, or smallest probability of making a Type I error).

2. The interpretation of the rankings (in parentheses) that provides the most liberal estimate of the difference between the ranks resulting from consultants' ratings of overall climate and employee ratings computed as a composite measure (lowest correlation, or largest probability of making a Type I error).

Considering first the composite climate measure for both employee-perceived and consultants' ratings of climate, the rank-order correlation was:

$$r_s = 1 - \frac{6 \sum d_i^2}{N(N^2-1)} = 1 - \frac{6 \cdot 24}{7(7^2-1)} = \underline{\underline{.57}}$$

This result can be tested for significance. One would assume that such a high correlation coefficient would be significant at $p = .05$.

However, the number of ranks, $N = 7$, was relatively low. For $N < 25$, a special table was worked out (Guilford, 1965, Appendix Table L). For $N = 7$, an $r_S = .57$ is not significant at $p = .05$. An $N = 10$ would be required for a correlation coefficient of $.57$; or for $N = 7$, a correlation coefficient of $r_S = .71$ would be required at $p = .05$ (one-tailed test).

Second, considering the composite measure for employee-perceived climate and the overall measure for consultants' ratings of climate, a conservative and a liberal estimate of the relationship were obtained. The conservative estimate represented "the best fit interpretation," and the liberal estimate "the poorest fit interpretation" of the relationship between employee ratings and external consultants' ratings of climate. That is, in the conservative estimate the ties were ordered (ranked) in such a way that the sum of the squared differences, $\sum_i D_i^2$, was minimized, whereas in the liberal estimate the ties were ordered so that $\sum_i D_i^2$ was maximized.

$$\text{Conservative estimate: } r_S = 1 - \frac{6 \cdot 2}{7(7^2 - 1)} = \underline{\underline{.96}}$$

$$\text{Liberal estimate: } r_S = 1 - \frac{6 \cdot 26}{7(7^2 - 1)} = \underline{\underline{.54}}$$

In accordance with the way the data were collected, these two estimates can be interpreted as follows: If the consultants were "forced" to rank the organizations as regards climate from 1 to 7, it is predicted that the correlation between this ranking and the ranking

derived from the employee-perceived climate would be in the interval $.54 \leq r_S \leq .96$.

Using the aforementioned table for testing of significance, the conservative estimate was significant beyond $p = .01$, whereas the liberal estimate was not significant at $p = .05$. Thus Hypothesis 1a received at least some tentative support. As stated in the literature review, studies have shown that perceptual measures of organizational climate do correlate with more objective nonperceptual climate measures, but the correlations are not high. The construct validity of organizational climate is important in further climate research. If future research does not manage to establish the necessary construct validity of employee-perceived organizational climate, the prevailing discussion of whether climate refers to attributes of organizations or attributes of people has to continue. Related to this problem is the question of whether climate really can be measured purely at the organizational level, or whether climate ought to be measured at different levels, such as the department or group level.

It is recommended that more research be conducted on external measures of organizational climate, in addition to the more subjective, employee-perceived measure. Unless such external measures are obtained, the question of accuracy of employee perceptions cannot be answered.

Inter- and Intraorganizational Climate Differences

Hypothesis 1b stated that there is a larger interorganizational climate difference than an intraorganizational climate difference. Organizational climate is an element and a contributing characteristic

of organizational environments. Therefore, this construct ought to distinguish among organizations; that is, the construct should have organization-specific variance. Organizational goals, policies, and practices are probably strong determinants of a prevailing climate and organizational "culture." And these goals, policies, and practices are different from organization to organization. That is why one would hypothesize a larger interorganizational than intraorganizational difference in climate.

Table 9 shows that the variation between groups was larger than the variation within groups. The values of mean squares in the ANOVA table can be used to calculate the intraclass correlation coefficient, which expresses that observations in the same category are related or tend on the average to be more like each other than observations in different categories (Hays, 1970). The intraclass coefficient derived from this ANOVA is considered as a simple linear transformation of a ratio of variance between classes and within classes in the analysis of variance (Kindall & Stuart, 1979; Kirk, 1968).

Table 9.--Between-group and within-group variances of organizational climate for eight organizations.

Source of Variation	df	Sum of Squares	Mean Squares	F-Ratio	Significance of F
Between groups	7	22.4725	3.2104	11.029	.0000
Within groups	246	71.6058	.2911		
Total	253	94.0783			

The sources of variation and estimated mean squares underlying this analysis of variance are as follows:

<u>Source of variance</u>	<u>E(MS)</u>
0	$\sigma^2_{S:0} + s\sigma^2_0$
S:0	$\sigma^2_{S:0}$

0 represents the organization and S:0 indicates that subjects are nested within the organization. The number of subjects (respondents) within each organization is labeled s . The estimated intraclass correlation coefficient then becomes (Guilford, 1965):

$$r_i = \frac{\frac{MS_0 - MS_{S:0}}{s}}{\frac{MS_0 - MS_{S:0}}{s} + MS_{S:0}} = \frac{MS_0 - MS_{S:0}}{MS_0 + (s-1)MS_{S:0}}$$

In this research, there were unequal cell sizes; that is, s varied from organization to organization. Therefore, a harmonic mean, \bar{s}_h , was calculated (Winer, 1971):

$$\bar{s}_h = \frac{pq}{\sum \sum \frac{1}{s_{ij}}} \quad \text{where } p = 1 \text{ and } q = 8 \text{ in the } p \times q \text{ factorial design.}$$

The groups that constituted the basis for the ANOVA tables were $s_1 = 25$, $s_2 = 51$, $s_3 = 41$, $s_4 = 37$, $s_5 = 20$, $s_6 = 17$, $s_7 = 19$, and $s_8 = 35$.

The harmonic mean then becomes:

$$\bar{s}_h = \frac{1 \cdot 8}{\sum_{j=1}^8 \frac{1}{s_j}} = \frac{8}{(.2855)} = 28.02 \approx \underline{28}$$

The intraclass correlation coefficient becomes:

$$r_i = \frac{3.1204 - .2911}{3.1204 + (28-1)(.2911)} = \underline{\underline{.26}}$$

This intraclass correlation is to be interpreted in the following way: The larger the intraclass correlation coefficient, the larger the inter-organizational climate difference relative to the intraorganizational climate difference. An estimated intraclass correlation larger than zero would indicate that some of the variability in organizational climate is accounted for by variation among different organizations; that is, intraorganizational climate differences are smaller than inter-organizational climate differences.

Testing of the significance of the intraclass correlation coefficient was derived directly from the ANOVA table because of the linear transformation of a ratio of variances between and within classes in the analysis of variance (Olkin, in Stanley, 1967, p. 123). The intraclass correlation of $r_i = .26$ was significant ($F = 11.029$, $p = .0000$). It shows that the difference in climate between organizations was significantly larger than the difference in climate within organizations. Therefore, Hypothesis 1b was retained.

The interorganizational climate difference was in agreement with findings by Drexler (1977) in a study of 6,996 individuals in 21 organizations. He argued that no selection-effect interpretation with regard to organization types was valid because more homogeneous subsamples resulted in similar findings.

The question of inter- and intraorganizational climate difference is related to item design and item selection. If climate items

with low response variance within organizations, but with high response variance between organizations, had been selected in the present Tanzanian research, a climate measure that better discriminated between organizations would have been obtained. Such a discrimination seems to be in agreement with Forehand and Gilmer's (1964) definition of organizational climate. These authors stated that climate is a set of characteristics "which distinguish the organization from other organizations." The larger inter- than intraorganizational climate difference found in the Tanzanian study supports Forehand and Gilmer's definition.

Climate analyses and climate variances within subunits of the organization as well as climate variances among different organizations may be positively used as a diagnostic tool in measuring the quality of organizational functioning.

Job Characteristics Measurements

Factor Analysis of Job Characteristics

According to the design of the job characteristics index, nine subvariables or aspects of job characteristics were considered in designing the items: personal growth and development, variety, autonomy, task identity, task significance, feedback of job performance, dealing with others, friendship opportunities, and status and prestige. Two factor analyses were performed, based on nine and five factors, respectively. The factor structure that best represented the data was a five-factor orthogonal rotation. The factor matrix and the communalities are shown in Appendix B.

Five of the 18 items had relatively high loadings on more than one factor. However, revisited content analysis of these items provided results that were in agreement with the results of the factor analysis, except for items #8 and #18. These are discussed at the end of this section.

The cumulative percentage of the total variance accounted for by these five underlying factors of job characteristics was 57.4%.

Table 10.--Factor 1 of the job characteristics index.

Item #	Items	Factor Loading
4	The opportunity to do a whole piece of work in your job (to do a job from beginning to end, not only part of it)	.53
8	The opportunity in your job to develop close friendship with people	.48
10	The opportunity in your job to be creative	.58
12	The amount of freedom to do the work in your own way	.50
13	The opportunity to complete the whole piece of work you begin	.52

Factor name: Open opportunities related to own work

Factor description: Opportunity to complete a whole piece of work, freedom to do the work in your own way, and freedom to be creative

Eigenvalue: 5.60

Percentage of total variance explained by this factor: 31.1%

Table 11.--Factor 2 of the job characteristics index.

Item #	Items	Factor Loading
5	The amount of impact your work has on other employees' life and work in the organization	.55
7	The opportunity in your job to give service to other people	.53
11	The amount of repetitive and routine tasks in your job	-.45
16	The opportunity in your job to deal with other people	.40

Factor name: Impact of job on other people

Factor description: Impact of work on other people, giving service to people, dealing with people, nonrepetitive and nonroutine tasks

Eigenvalue: 1.49

Percentage of total variance explained by this factor: 8.3%

Cumulative percentage of total variance explained: 39.4%

Table 12.--Factor 3 of the job characteristics index.

Item #	Items	Factor Loading
6	The opportunity to find out how you are performing your work	.53
15	The amount of information you get about your job performance from the job itself, that is, through doing the job (information from the job)	.32
18	The amount of decision-making power in your job	.40
19	The amount of information you get about your job performance from your superior and co-workers (information from people)	.62

Factor name: Performance feedback

Factor description: The amount of performance information one gets from the job itself, from co-workers, and from superiors.

Eigenvalue: 1.16

Percentage of total variance explained by this factor: 6.5%

Cumulative percentage of total variance explained: 45.9%

Table 13.--Factor 4 of the job characteristics index.

Item #	Items	Factor Loading
9	The amount of prestige in your job as compared to other jobs in the organization	.70
17	The amount of prestige in your job as compared to jobs of colleagues and peers in other organizations	.60

Factor name: Job prestige

Factor description: The amount of prestige and status one derives from the job

Eigenvalue: 1.07

Percentage of total variance explained by this factor: 5.6%

Cumulative percentage of total variance explained: 51.8%

Table 14.--Factor 5 of the job characteristics index.

Item #	Items	Factor Loading
1	The amount of personal growth and development you get from your job	.59
2	The amount of variety (doing different things) in your job	.44
3	The amount of independent thinking and action in your job	.50

Factor name: Actual growth and development

Factor description: Personal growth and development derived from the job; using a variety of knowledge, skills, and talents by solving a variety of problems and tasks; personal development through independent thinking and action at work

Eigenvalue: 1.01

Percentage of total variance explained by this factor: 5.6%

Cumulative percentage of total variance explained: 57.4%

Comments on the factor analysis of job characteristics.--All

of the items belonging to Factor 1 went together well in terms of content. They were all related to opportunities of employees' own work. However, item #8 also had a relatively high loading (.36) on Factor 2.

Items #5, #7, and #16 in Factor 2 went together well content-wise. However, items #7 and #16 were also loaded on Factor 1 (.43 and .34, respectively). Item #11 was factorially very "pure"; the loadings on the other four factors were approximately zero (.05). The scale for item #11 was reversed in the coding procedure because the item was negatively worded as regards job content. The negative factor loading (-.45) simply means that a high amount of repetitive and routine tasks is negatively correlated with the other item responses in this factor: impact of work on other employees, opportunity to give service to people, and dealing with people. As such, item #11 fitted well into the factor: "Impact of job on other people."

Item #18 in Factor 3 had some loading (.29) on Factor 1, "Open opportunities related to own work." It is difficult to interpret this factor item. It probably means that employees in higher-level jobs receive more feedback on their own job performance.

Items #1, #2, and #3 in Factor 5 were all related to individual growth and development. Doing a variety of tasks and problems at work contributes to the development of a variety of knowledge, skills, and talents, which all are a part of personal growth and development at work. Real possibilities for independent thinking and actions are also prerequisites for rapid mental growth and personal development.

When comparing the nine original predesigned subvariables of job characteristics and the five subvariables (factors) resulting from the factor analysis, the following was found: The original designed subvariable of task identity (two items) went into Factor 1: "Open opportunities related to own work." Furthermore, a single item from each of the predesigned subvariables--friendship opportunities, personal growth and development, and autonomy--went into this factor. They all seemed to constitute open opportunities in the work situation. The original designed subvariable of dealing with others (two items) went into Factor 2: "Impact of job on other people." In addition, one item from the original subvariable of task significance and one from the subvariable of variety went into this factor. The original designed subvariable of feedback of job performance (three items) went into Factor 3: "Performance feedback." Also, one item from the subvariable of task significance went into this factor. The original designed subvariable of status and prestige (two items) constituted Factor 4: "Job prestige," a total agreement between predesigned subvariables and outcome from factor analysis as regards one underlying factor of job characteristics. One item from each of the predesigned subvariables of personal growth and development, variety, and autonomy constituted Factor 5: "Actual growth and development."

Intrascale Reliabilities

The internal consistency among the items within each of the five factors of job characteristics was measured with Cronbach's alpha. Table 15 shows these intrascale reliabilities. The scales of job

characteristics showed satisfactory internal consistency; hence an assurance existed that the items within each scale were measuring consistently what they were measuring.

Table 15.--Intrascale reliabilities of job characteristics.

Subvariable	No. of Items	No. of Respondents	Cronbach's Alpha
Open opportunities related to own work	5	320	.74
Impact of job on other people	4	322	.65
Performance feedback	4	320	.62
Job prestige	2 ^a	327	--
Actual growth and development	3	327	.64

^aCronbach's alpha can only be computed for scales with three or more items.

Job Satisfaction Measurements

Twenty-four items were designed to constitute the job satisfaction index. Nineteen of the 20 items in the short form of the Minnesota Satisfaction Questionnaire (MSQ) were included in the index. One item was omitted because the content and wording were just the same as in one item of the job characteristics index. In addition, five items that could have a particular relevance to job satisfaction among employees in Tanzanian organizations were designed. This index was discussed in detail in Chapter III.

Factor analyses were performed for two types of operationalizations of job satisfaction. One type was based on the "is now" approach, and the other was based on the difference scores: "should be - is now."

Different ways of operationalizing this variable were discussed in detail in Chapter II.

The factor matrices and the communalities for the two factor analyses of job satisfaction are shown in Appendix C.

Factor Analysis of Job Satisfaction
Operationalized as "Is Now"
Attributes of the Job

Two factor analyses were performed, based on 20 and 5 factors, respectively. The starting point was 20 factors because the index contained the 20 subscales of the MSQ short-form questionnaire. The factor structure that best represented the data was a five-factor orthogonal rotation.

Nine of the 24 items had relatively high loadings on more than one factor--that is, loadings larger than .30 on two of the five factors. However, a revisited content analysis of the items supported fairly well the results of the factor analysis.

Comments on the factor analysis of job satisfaction when operationalized as "is now" attributes of the job.--Items #24, #33, and #34 in Factor 1 dealt directly with rewards (recognition and promotion included). Items #30 and #41 concerned opportunities to use one's abilities and to perform challenging tasks. These items also represented opportunities to be someone. Item #31 may be associated with increased authority and responsibility, and as such, it was also related to opportunities to be someone important.

Table 16.--Factor 1 of the "is now" job satisfaction index.

Item #	Items	Factor Loading
24	The opportunity to be a recognized person in the community	.39
30	The opportunity to do something that makes use of your abilities	.33
31	The opportunity to tell other people what to do	.50
33	The feeling that pay is satisfactory for the amount of work you do	.41
34	The opportunity to advance in this job	.48
41	The opportunity to perform challenging tasks	.60

Factor name: Opportunity to be someone important

Factor description: Satisfaction with pay, recognition and promotion, satisfaction with the degree of challenge in the work, satisfaction with the use of one's abilities at work, and satisfaction with authority and responsibility attached to the position

Eigenvalue: 6.99

Percentage of total variance explained by this factor: 29.1%

The items in Factor 2 were somewhat difficult to converge into one overall factor concept. They seemed to represent more-or-less private attitudes that made the employee like his job. The items did not represent aspects of the job content as such, nor did most of the items represent public characteristics of the job context.

The item structure in Factor 3 was relatively consistent and easy to interpret. Organizational objectives, policies, and practices and their influence on the employee's feelings about his/her job were the major theme. Additionally, work group climate belonged to this factor; group climate is related to existing objectives, policies, and

practices for cooperation and communication. The public image of the organization (item #41) is very much a derivative of policies and practices and affects the employee's feelings about his/her job.

Table 17.--Factor 2 of the "is now" job satisfaction index.

Item #	Items	Factor Loading
21	The opportunity of keeping yourself busy all the time	.46
22	The opportunity to work alone on the job	.51
23	The opportunity to do different things from time to time	.39
27	The feeling that you can do things that don't go against your conscience	.45
28	The feeling that your job provides for steady employment	.47
29	The opportunity to do things for other people	.32
35	The freedom to use your own judgment	.40
40	The feeling of accomplishment you get from the job	.47

Factor name: Private attitudes that make the employee like his job

Factor description: Satisfaction with types and varieties of tasks and activities, satisfaction with the degree of freedom at work, and satisfaction with accomplishments

Eigenvalue: 1.59

Percentage of total variance explained by this factor: 6.6%

Cumulative percentage of total variance explained: 35.8%

Table 18.--Factor 3 of the "is now" job satisfaction index.

Item #	Items	Factor Loading
32	The feeling that organizational policies are put into practice	.52
38	The feeling that your co-workers are getting along well with each other	.55
42	The feeling that you are working in an organization with a good public image	.33
43	The feeling that organizational objectives and personal goals go together	.58

Factor name: Organizational characteristics affecting the employee's feelings about his job

Factor description: Satisfaction with organizational objectives, policies and practices; satisfaction with the public image of the company, satisfaction with work group climate

Eigenvalue: 1.24

Percentage of total variance explained by this factor: 5.2%

Cumulative percentage of total variance explained: 40.9%

Factor 4 comprised three items, all dealing with the competence of the immediate superior. Content analysis supported the factor analysis completely. However, if the factor matrix is studied, it can be seen that one of the items (#39) had a factor loading larger than .30 on Factor 1. This also seems to be logical because getting praise for doing a good job is certainly related to being someone important.

Factor 5 contained three items, all of which dealt with physical and social conditions, including leisure conditions external to the work.

Table 19.--Factor 4 of the "is now" job satisfaction index.

Item #	Items	Factor Loading
25	The feeling that your superior handles you in a nice and correct way	.73
26	The competence of your superior in making decisions	.41
39	The feeling of praise you get for doing a good job	.47

Factor name: Feelings toward immediate superior

Factor description: Satisfaction with technical and human qualifications of one's superior

Eigenvalue: 1.19

Percentage of total variance explained by this factor: 5.0%

Cumulative percentage of total variance explained: 45.9%

Table 20.--Factor 5 of the "is now" job satisfaction index.

Item #	Items	Factor Loading
37	Good working conditions, such as lighting, ventilation, air-conditioning, etc.	.32
44	The opportunity at work to chat and socialize with colleagues informally	.57
45	The opportunity in the community to visit bars, dancing restaurants, and other leisure and entertaining places	.49

Factor name: Physical and social conditions

Factor description: Satisfaction with physical working conditions, satisfaction with opportunities of socializing at work, and satisfaction with opportunities of leisure activities external to the work environment

Eigenvalue: 1.09

Percentage of total variance explained by this factor: 4.6%

Cumulative percentage of total variance explained: 50.4%

When comparing the 20 original predesigned subvariables of the Minnesota Satisfaction Questionnaire (MSQ) with the five factors resulting from the factor analysis, the following was found: As each of the predesigned subvariables roughly constituted one item only, a fusion of several subvariables into one factor was necessary. For example, six predesigned subvariables were fused to form Factor 1, and so on. The problem became one of finding a common, superordinate factor name for several MSQ subvariables.

Factor Analysis of Job Satisfaction
Operationalized as the Discrepancy
Score Between "Should Be" and "Is Now"

Two factor analyses were performed, based on five and six factors, respectively. The factor structure that best represented the data was a six-factor orthogonal rotation of the discrepancy scores.

Seven of the 24 items had relatively high factor loadings ($<.30$) on two of the six factors. Two of the 24 items had relatively high factor loadings ($<.30$) on three of the six factors. The cumulative percentage of the total variance accounted for by these six factors of job satisfaction was 54.8%.

Comments on the factor analysis of job satisfaction when operationalized in accordance with the discrepancy theory.--Content analysis of the items belonging to Factor 1 of job satisfaction revealed that this factor was rather complex. Twelve items belonged to this factor. Contrasted with Herzberg's motivators and hygiene factors, it was evident from the content analysis that Factor 1 consisted of both motivators (e.g., #30 and #34) and hygiene factors (e.g., #25, #26, #32,

#33, #37). It seems, however, that hygiene factors far outnumbered motivators in this factor. All the items were related to attributes of a good job.

Table 21.--Factor 1 of the "should be - is now" job satisfaction index.

Item #	Items	Factor Loading
24	The opportunity to be a recognized person in the community	.55
25	The feeling that your superior handles you in a nice and correct way	.43
26	The competence of your superior in making decisions	.34
30	The opportunity to do something that makes use of your abilities	.31
32	The feeling that organizational policies are put into practice in a good way	.61
33	The feeling that pay is satisfactory for the amount of work you do	.52
34	The opportunity to advance on this job	.52
35	The freedom to use your own judgment	.50
37	Good working conditions, such as lighting, ventilation, air-conditioning, etc.	.46
39	The feeling of praise you get for doing a good job	.54
42	The feeling that you are working in an organization with a good public image	.50
43	The feeling that organizational objectives and personal goals go together	.55

Factor name: Attributes of a good job

Factor description: Satisfaction with technical and human qualities of one's superiors, satisfaction with rewards (pay, recognition, promotion), satisfaction with freedom at work, satisfaction with organizational objectives and policies, satisfaction with the public image of the organization, and satisfaction with working conditions

Eigenvalue: 6.89

Percentage of total variance explained by this factor: 28.7%

Table 22.--Factor 2 of the "should be - is now" job satisfaction index.

Item #	Items	Factor Loading
40	The feeling of accomplishment you get from the job	.39
41	The opportunity to perform challenging tasks	.70

Factor name: Job challenge and accomplishment

Factor description: Satisfaction with the degree of job challenge,
satisfaction with the accomplishment one derives
from the job

Eigenvalue: 1.60

Percentage of total variance explained by this factor: 6.7%

Cumulative percentage of total variance explained: 35.4%

Table 23.--Factor 3 of the "should be - is now" job satisfaction index.

Item #	Items	Factor Loading
38	The feeling that your co-workers are getting along well with each other	.41
44	The opportunity at work to chat and socialize with colleagues informally	.53

Factor name: Pleasant work group climate

Factor description: Satisfaction with interpersonal relations in the
work group, satisfaction with opportunities to
socialize and build relationships at work

Eigenvalue: 1.28

Percentage of total variance explained by this factor: 5.3%

Cumulative percentage of total variance explained: 40.7%

Table 24.--Factor 4 of the "should be - is now" job satisfaction index.

Item #	Items	Factor Loading
22	The opportunity to work alone on the job	.63
28	The feeling that your job provides for steady employment	.38
31	The opportunity to tell other people what to do	.37

Factor name: Independence on the job

Factor description: Satisfaction with opportunities to work alone on the job, satisfaction with job security, satisfaction with leadership opportunities

Eigenvalue: 1.17

Percentage of total variance explained by this factor: 4.9%

Cumulative percentage of total variance explained: 45.6%

Table 25.--Factor 5 of the "should be - is now" job satisfaction index.

Item #	Items	Factor Loading
21	The opportunity of keeping yourself busy all the time	.37
27	The feeling that you can do things that don't go against your conscience	.50
29	The opportunity to do things for other people	.39

Factor name: Freedom from job guilt

Factor description: Satisfaction with one's feelings of doing things that don't go against one's conscience, satisfaction with opportunities of being busy, satisfaction with opportunities of giving service to other people

Eigenvalue: 1.15

Percentage of total variance explained by this factor: 4.8%

Cumulative percentage of total variance explained: 50.4%

Table 26.--Factor 6 of the "should be - is now" job satisfaction index.

Item #	Items	Factor Loading
23	The opportunity to do different things from time to time	.33
45	The opportunities in the community to visit bars, dancing restaurants, and other leisure and entertaining places	.61

Factor name: Opportunity for variety

Factor description: Satisfaction with leisure and recreation opportunities in the community, satisfaction with the task variety on the job

Eigenvalue: 1.04

Percentage of total variance explained by this factor: 4.3%

Cumulative percentage of total variance explained: 54.8%

Factor 2 was very easy to interpret. The two items belonging to this factor dealt with job challenge and accomplishment. In Herzberg's terminology, this factor would be designated "motivators." Item #40 was also loaded (.31) on Factor 4. In terms of content, it did not seem to belong there, but it fitted well into Factor 2.

The items constituting Factor 3 were factorially "pure" and easy to interpret from content analysis. This was the dimension of pleasant work group climate, with emphasis on good social relations.

Factor 4 was difficult to interpret, even though the three items did not load above .30 on other factors. Two of the items had moderate loadings on Factor 4. Content analysis seemed to disclose independence factors on the job as the "common denominator" of the

three items. Even item #28 may have been answered by the respondents in terms of an independence dimension.

Content analysis revealed that Factor 5 dealt with freedom from job guilt. Doing the right things, keeping oneself active, and not doing things that go against one's conscience all seemed to be related to freedom from guilt. Item #29 had a moderate factor loading also on Factor 4 (.39). However, Item #29 did not seem to fit logically into Factor 4. Items #39 and #31 (in Factor 4) had in common that both dealt with people. The difference was that item #31 was referring to leadership or power with (or over) other people (independence), whereas item #29 was referring to doing things for or providing service to other people (acceptable activities such as providing service contribute to freedom from guilt on the job).

The two items constituting Factor 6 had no loadings larger than .30 on any of the other five factors. The common element of these two items seemed to be the opportunity of involving oneself in a variety of life activities that tend to prevent monotony and continuous boredom and/or exhaustion at work.

When comparing the 20 original predesigned subvariables of the Minnesota Satisfaction Questionnaire (MSQ) with the six factors resulting from the factor analysis, it was evident that a fusion of several subvariables of the MSQ into one factor was necessary. Factor 1, "attributes of a good job," contained as many as 12 items. The two items of Factor 2 represented a merging of two MSQ subvariables. Factors 4 and 5 each contained three items and represented a merging of three subvariables of the MSQ. Factors 3 and 6 each contained one

item from the MSQ and one additional item assumed to be of particular relevance to the Tanzanian situation.

Contrasting the factor analyses of the two ways of operationalizing job satisfaction.--The two factor structures were quite different in terms of interpretation and definition of each underlying factor within each factor analysis. The fact that as many as 50% of the items constituted Factor 1 when job satisfaction was operationalized in accordance with the discrepancy theory increased the likelihood that the rest of the items would also be grouped differently from the factor analysis based on the "is now" operationalization of satisfaction. A five-factor structure similar to the factor structure that best represented the data in the "is now" operationalization of job satisfaction was also done for comparison purposes. Very little agreement or consistency was found between the factors in the two operationalizations, as Table 27 shows.

Table 27.--Matrix of number of items in the five-factor structure of job satisfaction, operationalized in accordance with the "is now" and the discrepancy ("should be - is now") approaches.

"Is Now"	"Should Be - Is Now"				
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Factor 1	3	1	1	0	1
Factor 2	1	1	1	3	2
Factor 3	3	1	0	0	0
Factor 4	3	0	0	0	0
Factor 5	1	0	2	0	0

The comparison between these two five-factor structures of the same construct, job satisfaction, provided the following results: All three items in Factor 4 of the discrepancy operationalization were found in Factor 2 of the "is now" operationalization. Two of the three items in Factor 5 of the discrepancy operationalization were also found in Factor 2 of the "is now" operationalization. However, one item from each of Factors 1, 2, and 3 of the discrepancy operationalization was also included in Factor 2 of the "is now" operationalization. Furthermore, all three items in Factor 4 of the "is now" operationalization were found in Factor 1 of the discrepancy operationalization. And three of the four items in Factor 3 of the "is now" operationalization were also found in Factor 1 of the discrepancy operationalization. However, this Factor 1 included items from all five factors of the "is now" operationalization. As a whole, there was not much agreement between the two five-factor structures. Therefore, the six-factor structure of the discrepancy operationalization was analyzed in accordance with the stated factor structure rules and was used in the further data analysis.

Intrascale Reliabilities and Construct Validity Between the Two Satisfaction Measures

The interval consistency among the variables within each scale was measured with Cronbach's alpha. The intrascale reliabilities, particularly for the "is now" operationalization of job satisfaction, were moderate to high. The scales showed a satisfactory internal consistency. (See Table 28.)

Table 28.--Intrascale reliabilities of job satisfaction.

Subvariable	No. of Items	No. of Respondents	Cronbach's Alpha
<u>"Is Now" Operationalization</u>			
Opportunity to be someone important	6	311	.76
Private attitudes that make the employee like his job	8	297	.76
Organizational characteristics affecting the employee's feelings about his job	4	314	.69
Feelings toward immediate superior	3	314	.70
Physical and social conditions	3	316	.54
<u>"Should Be - Is Now" Operationalization</u>			
Attributes of a good job	12	336	.82
Job challenge and accomplishment	2 ^a	--	--
Pleasant work group climate	2 ^a	--	--
Independence on the job	3	336	.49
Freedom from job guilt	3	336	.48
Opportunity for variety	2 ^a	--	--

^aCronbach's alpha can only be computed for scales with three or more items.

Hypothesis 2 stated that there is a strong positive relationship between job satisfaction operationalized in accordance with the discrepancy theory and job satisfaction operationalized in accordance with the "is now" approach. Pearson correlation analysis was used to test this hypothesis. Table 38 shows that the correlation coefficient between the two ways of operationalizing job satisfaction was .59 ($p < .001$, $n = 319$). This is a rather strong relationship and indicates

that if one way of operationalizing satisfaction is valid and reliable the other operationalization is also valid and reliable. This suggests that the measures possess some degree of construct validity. Therefore, Hypothesis 2 was retained. However, as will be shown, these two methods of operationalization do not provide consistent results when correlated with job performance measures.

Job Performance Measurements

Intrascale Reliabilities

Job performance was measured both as self- or employee ratings and as supervisory ratings. Three aspects of job performance were measured: quantitative performance, qualitative performance, and overall performance. Table 29 shows the intrascale reliabilities, measured with Cronbach's alpha.

Table 29.--Intrascale reliabilities for job performance.

Job Performance	No. of Items	No. of Respondents	Cronbach's Alpha
Job performance (self-ratings)	3	326	.64
Job performance (supervisory ratings)	3	326	.86

The two scales were operationally the same but were applied on two different categories of raters. The intrascale reliabilities were both high, but the supervisory ratings of performance provided a higher internal consistency among the three items or aspects of job performance. This means that supervisors are in a better position to rate

more consistently the different aspects of job performance than are the employees themselves. It is not necessarily true that high quantitative performance consistently goes together with high qualitative performance for all employees. Many employees may show high quantitative and low qualitative performance, and vice versa. If this is the case, these two aspects of job performance should belong to different scales if a job performance index had been designed. In this case, therefore, the higher consistency among the responses to performance items for supervisory ratings was not necessarily better or more correct than the lower internal consistency among the responses for self-ratings.

Self-Ratings and Supervisory Ratings of Job Performance

Several hypotheses were tested as regards self-ratings and supervisory ratings of job performance. Hypothesis 3a stated that there is a low but positive relationship between self-ratings and immediate-supervisors' ratings of job performance. Table 30 shows Pearson correlations between the different performance aspects for self-ratings and supervisory ratings of this behavioral variable. Composite performance ($P_{\text{comp.}}$) was calculated as the arithmetic mean of the responses to the three performance aspects.

The intrascale correlations for each of the two rater groups were fairly high and were significant at $p < .001$. There was a significant positive, but small, correlation between the composite measures, self-ratings and supervisory ratings of job performance: $r = .16$ ($n = 322$, $p < .01$). The correlation coefficient between self-ratings

Table 30.--Pearson correlations between self-ratings and supervisory ratings of job performance.

	Self-Ratings				Supervisory Ratings			
	Quant. Perf.	Qual. Perf.	Overall Perf.	P comp.	Quant. Perf.	Qual. Perf.	Overall Perf.	P comp.
<u>Self-ratings</u>								
Quant. perf.	1.00							
Qual. perf.	.32*	1.00						
Overall perf.	.38*	.42*	1.00					
Composite perf. = P comp.	.76*	.75*	.78*	1.00				
<u>Supervisory ratings</u>								
Quant. perf.	.21*	.02	.11	.15**	1.00			
Qual. perf.	.11	.10	.22*	.19*	.63*	1.00		
Overall perf.	.11	.05	.05	.10	.70*	.72*	1.00	
Composite perf. = P comp.	.16**	.06	.15**	.16**	.88*	.88*	.90*	1.00

*p < .001.

**p < .01.

and supervisory ratings of the quantitative aspect of performance was also significant: $r_{\text{quant.}} = .21$ ($n = 322$, $p < .001$). The qualitative aspect of performance and the overall performance aspect for each of the rater groups did not show significant correlations. Hence Hypothesis 3a was retained or at least supported.

This relatively low correlation of .16 between self-rating and supervisory rating of job performance was in agreement with Lawler's findings ($r = .09$) as described in Chapter II. Lawler concluded from his study that self-rating did not show convergent and discriminant validity.

Hypothesis 3b stated that employees rate their performance higher than their immediate supervisor does. The t-test data in Table 31 tested this hypothesis.

Table 31.--t-test data for self-ratings and supervisory ratings of job performance.

Variable	Type of Rating	Mean	t-value	df	Significance Level (two-tailed test)
Quant. performance	Self-ratings Superv. rat.	5.2950 4.8478	5.21	321	.000
Qual. performance	Self-ratings Superv. rat.	5.2640 4.7360	6.11	321	.000
Overall performance	Self-ratings Superv. rat.	5.1708 4.7764	4.33	321	.000
Composite performance = $P_{\text{comp.}}$	Self-ratings Superv. rat.	5.2433 4.7867	6.58	321	.0000

Table 31 shows that employees rated their own job performance ($P_{\text{comp.}}$) higher than their supervisors did. A t-test for paired observations showed that the mean difference was statistically significant ($p = .000$). This was also the case for all three subvariables or aspects of job performance ($p = .000$). Employees rated all aspects of their own job performance higher than their supervisors did. Hypothesis 3b was retained. It is difficult from this analysis to state absolutely which of the two ratings is most reliable and valid. It is, however, commonly thought that self-ratings are more subjective, with more rater biases involved, than are supervisory ratings.

Hypothesis 3c tested whether there was any difference in the strength of the relationship between self-ratings and supervisory ratings of job performance for the two types of organizations investigated. Table 32 shows this relationship for educational organizations and production firms as regards the composite measure of job performance.

The correlations between self-ratings and supervisory ratings of job performance in educational and production organizations were $r = .39$ ($p < .001$) and $r = .06$ (n.s.), respectively. Even though this relationship was established for the total sample ($r = .16$, $p < .01$), it continued to exist only for educational institutions when the data were analyzed separately for the two types of organizations. This result was in total agreement with the results from each of the eight organizations. Table 32 shows consistently that only for educational institutions was there a significant relationship between self-ratings and supervisory ratings of job performance. Hypothesis 3c was retained. Because of the lower number of cases for each organization, the

Table 32.--Pearson correlations between self-ratings and supervisory ratings of job performance for higher education organizations and production firms.

Type of Organization	Correlation Coefficient	Respondent Organization	Correlation Coefficient
Educational organizations	.39* (96)	Ed. org. No. 1	.53*** (18)
		Ed. org. No. 2	.44*** (26)
		Ed. org. No. 3	.33** (52)
Production firms	.06 (226)	Prod. firm No. 1	.18 (31)
		Prod. firm No. 2	.07 (65)
		Prod. firm No. 3	-.02 (46)
		Prod. firm No. 4	-.01 (53)
		Prod. firm No. 5	.18 (31)

*p < .001.

**p < .01.

***p < .05.

correlations were significant only at $p < .01$ and $p < .05$. This may mean that employees in the higher education institutions know better what is expected of them, hence judge the actual performance level more in accordance with superiors' expectations than employees in production firms do. This difference in expectation knowledge between the two types of organizations may be the result of a difference in the degree to which performance is clearly established and communicated to the employees. The results in Table 32 may, however, be interpreted in terms of supervisors' skills in rating their subordinates in a consistent and valid way. Supervisors in production firms may not be very experienced and/or skilled in performance evaluation, or they

may be subjected to more rater biases, such as the halo effect, the recency problem, personal friendship, and tribalism. It is also possible that a combination of these interpretations may have caused the observed difference between the two types of organizations: knowledge of performance criteria and expectations, and supervisors' rating skills, experience, and biases.

To test Hypothesis 3d, the same correlational data, split up on educational level and position level of the individual respondents, are shown in Table 33. The table shows that the strength of the relationship between self-ratings and supervisory ratings of performance increased with increasing education. This relationship ($r = .34$) was significant at $p < .01$ for the highest educational level only. The strength of the relationship did not increase with increasing position level.

Table 33.--Pearson correlations between self-ratings and supervisory ratings of job performance, controlled for educational level and position level.

Controlling Variable	Levels	Correlation Between Self-Ratings and Supervisory Ratings of Job Performance	Difference (Low-High)
Education	High	.34* (n = 64)	p = .05
	Intermed.	.16 (n = 73)	
	Low	.11 (n = 181)	
Position	High	.16 (n = 84)	p = .40
	Intermed.	.15** (n = 148)	
	Low	.12 (n = 80)	

*p < .01.

**p < .05.

To test for significance between the correlation coefficients of the three levels of education and position, the procedure of Johnson and Stinson (1975) was applied. The correlations between the low (L) and high (H) groups of the controlling variable were compared. Using Fisher's z-transformation of r , and the formula $X = (Z_L - Z_H) / \sqrt{1/n_1 - 3 + 1/n_2 - 3}$, it was found that for educational level, the difference in correlations between the low and high groups was significant at $p = .05$. For position level, there was no significant difference in correlations between the low and high groups ($p = .40$). Hypothesis 3d was only partially supported; that is, the hypothesis for educational level was retained and the hypothesis for position level was not retained.

Increased educational level may result in a higher employee awareness of what is expected of them in terms of individual performance. As a result, a greater consistency in performance expectations between the employee and his/her supervisor develops. Ultimately, this results in a stronger relationship between self-ratings and supervisory ratings of job performance. Simultaneously, educational level probably also means better skills and experience in performance appraisal, with fewer rater biases. This also is likely to result in an increased strength in the relationship between self-ratings and supervisory ratings of job performance.

To obtain more knowledge about how employees rated their own performance relative to other employees in the organization, four frequency tables were developed, one for self-ratings and supervisory ratings of quantitative performance, one for qualitative performance,

one for overall performance, and one for the composite measure of job performance. The scale used to measure job performance was a relative one (i.e., relative to other employees in the organization), as the nominal categories in the tables demonstrate. (See Tables 34-37.)

The four frequency tables show consistently that Tanzanian employees were very reluctant to rate their own job performance below average. Depending on the various performance aspects, only 5-9% of the employees rated themselves below average, whereas as many as 74-79% rated themselves above average. This is, however, much in agreement with similar research in the United States (Meyer, 1980; Meyer, Kay, & French, 1965; Parker, Taylor, Barret, & Martins, 1959). In a study of 92 U.S. employees, Meyer (1980) found that only 2 out of 92 subjects (2.2%) placed themselves below the 50th percentile. Meyer stated:

I have consistently found that at least 40% of the employees in jobs of all types place themselves in the top category. That is, they see themselves as "one of the best" in job performance. Almost all of the remaining employees place themselves in one of the other two above-average categories. Usually no more than 1 or 2% will place themselves in a below-average category, and then those are almost invariably in the top below-average category (pp. 292-93).

These U.S. results were even more "biased" or inflated than the Tanzanian results. It demonstrates that the leniency rating error is very high when self-ratings are obtained by comparing one's job performance to that of other employees--that is, using a relative scale with categories such as "average," "above average," and "below average."

Few employees gave self-appraisals of job performance in the lowest category, "very much below average." The percentage of employees who provided that low performance evaluation amounted to only about 1%

Table 34.--Frequencies for self-ratings and supervisory ratings of quantitative job performance.

Nominal Response Category	Code	Absolute Frequency		Relative Frequency		Percent Below and Above Average	
		Self- Ratings	Supervisory Ratings	Self- Ratings	Supervisory Ratings	Self- Ratings	Supervisory Ratings
Very much below average	1	4	0	1.2	0		
Much below average	2	12	7	3.7	2.1	8.9	8.8
Slightly below average	3	13	22	4.0	6.7		
Average	4	51	100	15.6	30.7		
Slightly above average	5	77	97	23.6	29.8		
Much above average	6	116	84	35.6	25.8	75.5	60.5
Very much above average	7	53	16	16.3	4.9		

Table 35.--Frequencies for self-ratings and supervisory ratings of qualitative job performance.

Nominal Response Category	Code	Absolute Frequency		Relative Frequency		Percent Below and Above Average	
		Self- Ratings	Supervisory Ratings	Self- Ratings	Supervisory Ratings	Self- Ratings	Supervisory Ratings
Very much below average	1	4	2	1.2	.6		
Much below average	2	7	6	2.1	1.8	6.7	10.1
Slightly below average	3	11	25	3.4	7.7		
Average	4	57	106	17.5	32.5		
Slightly above average	5	85	101	26.1	31.0		
Much above average	6	125	75	38.3	23.0	75.7	57.4
Very much above average	7	37	11	11.3	3.4		

Table 36.--Frequencies for self-ratings and supervisory ratings of overall job performance.

Nominal Response Category	Code	Absolute Frequency		Relative Frequency		Percent Below and Above Average	
		Self- Ratings	Supervisory Ratings	Self- Ratings	Supervisory Ratings	Self- Ratings	Supervisory Ratings
Very much below average	1	4	0	1.2	0		
Much below average	2	11	7	3.4	2.1	8.9	7.0
Slightly below average	3	14	16	4.3	4.9		
Average	4	54	116	16.6	35.6		
Slightly above average	5	95	102	29.1	31.3		
Much above average	6	111	74	34.0	22.7	74.4	57.4
Very much above average	7	37	11	11.3	3.4		

Table 37.--Frequencies for self-ratings and supervisory ratings of composite job performance.

Nominal Response Category	Code	Absolute Frequency		Relative Frequency		Percent Below and Above Average	
		Self- Ratings	Supervisory Ratings	Self- Ratings	Supervisory Ratings	Self- Ratings	Supervisory Ratings
Very much below average	1	1	0	.3	0		
Much below average	2	0	3	0	.9	5.4	7.6
Slightly below average	3	17	22	5.1	6.7		
Average	4	50	107	15.3	32.8		
Slightly above average	5	116	112	35.7	34.4		
Much above average	6	119	73	36.5	22.4	79.3	69.5
Very much above average	7	23	9	7.1	2.7		

of the sample. These few employees may either have been extremely honest and probably also accurate in their self-appraisals, or they may have had an extremely low self-esteem, which may have resulted in unrealistically low self-ratings of job performance.

What about supervisory performance ratings based on the same relative rating scale? As the four frequency tables showed, even the supervisors were reluctant to rate their subordinates' performance below average. However, a much larger percentage of the employees were placed in the average category and the category immediately above average by supervisory ratings than they were by self-ratings. This resulted in a lower percentage of supervisory ratings above average as compared to self-ratings. Still, as many as 57-69.5% of the employees were rated above average, depending on the various performance aspects and the composite measure of job performance. Meyer (1980) reported from U.S. samples that the average percentile rating by supervisors was 62. This result seems to be fairly close to the findings in the Tanzanian sample. However, as Table 31 showed, employees rated themselves significantly higher than their supervisors did.

The interpretation of these results may differ for the American and Tanzanian samples. There is a tendency in the Tanzanian work culture to regard employees at work as if they always succeed. This may partially be based on the political ideology and the particular human considerations that exist in the Tanzanian culture. After Tanzania gained its independence, a goal was to develop the people toward higher self-confidence, self-esteem, and self-reliance. These and other work values and human considerations may have contributed to the research

findings as regards both self-ratings and supervisory ratings of job performance. In terms of supervisory ratings, there might also be a tendency not to rate subordinates below average because this may be interpreted as a failure in the hiring procedure. This behavioral tendency may be partially unconscious on the part of the supervisors.

However, there are other reasons for the inflated self-ratings.

Employees have a tendency to rate their own performance more favorably when the ratings are given in confidence or anonymously, as compared to publicly announced self-appraisals (Parker et al., 1959). There is hardly any reason to believe that this is not the case in the Tanzanian culture. Self-appraisals that are part of a feedback discussion of job performance and future goal setting for the individual employee are likely to be surprisingly modest (Basset & Meyer, 1968). Being immodest is not a valued trait in the Tanzanian culture or in Western cultures. Regarding the confidential self-ratings of job performance, there is a psychological necessity to maintain a positive self-image, including the self that is related to one's work ("the organizational self"). This may be another reason why the self-appraisals made in confidence are unrealistically high or subjected to the leniency error.

The question is whether inflated self-appraisals are a desirable and positive phenomenon. At a general level, this problem has been investigated and discussed at length in the psychology literature. If the gap between self-perceived and supervisory-perceived job performance is not too wide, it is probably more positive than negative to have higher self-perceptions. The reason is, first of all, the advantage of having a high self-esteem and a positive self-image. Research has shown

that people with high self-esteem perform better than people with low self-esteem, other factors held constant (Korman, 1977). Work motivation, pride in doing work, and personal adjustment are also higher for people with high self-esteem (Zander, 1963).

If performance appraisal is used to criticize and punish employees who possess a wide gap between self-ratings and supervisory ratings, such feedback is likely to threaten employees' self-esteem on job performance. This, in turn, is likely to create defensive behavior and even lower future performance. Research has shown that employees who are told they are doing well on a task improve their subsequent performance, whereas employees who are told they are doing poorly show a decline in performance. Negative performance feedback should not, however, be avoided in general, but comparative feedback similar to grades or ratings in a forced distribution is not a wise approach to giving performance feedback. Self-competition is, in many cases, more constructive and nurturing for personal growth and improved job performance. In organizational behavior, self-ratings of one's relative strengths in different competency domains may be reasonably accurate and useful for both individual and organizational improvement. In addition, self-ratings are less subject to halo error than are supervisory ratings (Weaver, 1980). It is the other way around as regards leniency error. Skilled adult educators and trainers who understand conditions underlying effective learning environments in which personality growth and development can take place would focus on the relationship between specific behavioral changes and improved performance. Giving feedback

in such a perspective may not only be constructive, but will nurture or maintain rather than threaten employees' self-esteem.

Zero-Order Correlations Between Job Characteristics,
Organizational Climate, Job Satisfaction, Job
Performance, and Their Subvariables

Correlations Across All the
Respondent Organizations

Hypothesis 4 stated that positive relationships exist among job characteristics, organizational climate, job satisfaction, and job performance. Table 38 shows the zero-order correlations (Pearson product-moment correlations) between the four major composite variables. The numbers in parentheses are sample sizes.

Table 38.--Pearson correlations between job characteristics, organizational climate, job satisfaction, and job performance.

Major Variable	Job Character- istics	Org. Climate	Job Satisfaction ("Is Now")	Job Satisfaction (Discrepancy)
Job character- istics	1.00			
Org. climate	.36* (331)	1.00		
Job satisfaction ("is now")	.74* (316)	.45* (318)	1.00	
Job satisfaction (discrepancy)	.39* (331)	.36* (334)	.59* (319)	1.00
Job performance (self-ratings)	.16* (322)	.07 (324)	.15** (311)	-.12 (326)
Job performance (supervisory ratings)	.09 (322)	.02 (324)	.14** (311)	-.01 (326)

*p < .001.

**p < .01.

There were significant positive zero-order correlations between job characteristics, organizational climate, and job satisfaction. The Pearson correlation coefficient for job characteristics/job satisfaction (operationalized as "is now") was very high (.74). Also, job satisfaction, operationalized in accordance with the discrepancy theory, showed significant positive relationships with job characteristics (.39). Both correlations were significant beyond $p = .001$. These correlations were higher than found in other relevant research investigations. In a South African sample of 82 tribal and Western-oriented black workers, Orpen (1979) found no significant correlations between four job characteristics and five aspects of job satisfaction. Actually, half of the correlations were negative. In the sample of Western-oriented black subjects, the correlations were somewhat higher. Three of the 20 correlations (variety/work itself = .40, autonomy/work itself = .33, and feedback/supervision = .40) were significant at $p < .01$. The remaining 17 correlations ranged from .16 to .37. The distinction between the two black samples was made by testing the respondents with the 52-item Urban-Rural Scale developed by Grant (1979). Acceptance of Western ideas and values versus traditional tribal ideas and values was the basis for the distinction.

Self-ratings of job performance were positively and significantly related to job characteristics and job satisfaction (operationalized in accordance with the "is now" approach). However, the correlations were relatively low (.16 and .15, respectively). Self-rating of job performance was not significantly correlated with organizational climate or with job satisfaction (discrepancy theory). The last correlation was even slightly negative (-.12).

The correlation between supervisory rating of job performance and job satisfaction, operationalized in accordance with the discrepancy theory, was also slightly negative. These results may perhaps have the following explanation: Even employees with high job performance may want to have a greater amount of certain aspects of the job content and context and still be relatively well satisfied with the present amount of these job aspects. This will show up as a discrepancy score, which is an expression of the degree of job dissatisfaction. The problem is essentially one of defining and operationalizing in an unambiguous way what is meant by "is now" and "should be," so that the respondents can give consistent answers to the two questions, which provides for a discrepancy score. This difficulty may be the reason why the "is now" operationalization of satisfaction showed higher positive correlation with job performance (.15 and .14) than did the discrepancy operationalization of satisfaction (-.12 and -.01). The same interpretation can be offered for the correlation results of job satisfaction/job characteristics (.74 and .39) and of job satisfaction/organizational climate (.45 and .36). The conclusion is that job satisfaction, operationalized in accordance with the discrepancy theory, consistently provided lower correlations with the other variables as compared to the same correlations based on the "is now" operationalization of satisfaction. This supports the finding of Wanous and Lawler (1972), who found that the "is now" operationalization correlated significantly higher with direct facet satisfaction ratings ("How satisfied are you with...") than did the "should be - is now" operationalization. The average correlations were .60 and .36, respectively.

Supervisory rating of job performance showed significant but low correlation (.14) with the "is now" operationalization of job satisfaction only. Supervisory rating of performance did not show any significant relationship with job characteristics, organizational climate, and job satisfaction operationalized in accordance with the discrepancy satisfaction theory. Hypothesis 4 was retained except for the discrepancy operationalization of job satisfaction as regards the satisfaction/performance relationship.

Most researchers on the performance/satisfaction relationship have found low correlations. In a sample of 80 female telephone operators, Wanous (1974) found a correlation of .09 between job satisfaction and performance. Three months later, a correlation of .15 was found for the same sample. These correlation coefficients were not statistically significant at $p = .01$. When the author split satisfaction into intrinsic and extrinsic factors, the correlations were still low and not statistically significant. Use of a cross-lagged correlation pattern slightly increased the correlation. Slocum (1970) also found low correlations between job performance and the categories in Maslow's need hierarchy. The sample was 200 middle- and lower-level managers, and the correlations ranged from .14 to .29, many of them significant at $p = .01$. Lawler and Porter (1967) earlier had found similar sizes of correlation coefficients between performance and Maslow's need categories. Vroom (1964) reviewed the research literature on this topic and found a mean correlation of .14 between job performance and job satisfaction.

In a sample of 132 black supervisors in South Africa, Orpen (1978) found a correlation of $r = .45$ ($p < .01$) between job performance and satisfaction for Western-oriented supervisors, but he found a correlation of only $r = .02$ for tribal supervisors. If these findings are valid and also hold for other cultures, there is reason to believe that a higher correlation between performance and satisfaction should be found for educated and/or Westernized Tanzanians as compared to those who are more tribal oriented. Table 40 supports Orpen's findings for supervisory rating of job performance correlated with job satisfaction. For higher education institutions, the correlation was .26; for production firms, the correlation was .07. Tanzanian higher education institutions probably have more Westernized and educated employees than do production firms. Whether educational level does or does not influence the strength of the relationship between job satisfaction and performance will be investigated later in this chapter, in the section entitled The Satisfaction/Performance Relationship Controlled for Demographic Variables.

Correlations between each major variable and its subvariables, and between subvariables belonging to the same major variable.--Table 39 presents the total matrix of the zero-order correlations between subvariables, between major variables, and between subvariables and major variables. The subvariables were as follows:

- Job characteristic 1: "Open opportunities related to own work"
- Job characteristic 2: "Impact of job on other people"
- Job characteristic 3: "Performance feedback"
- Job characteristic 4: "Job prestige"
- Job characteristic 5: "Actual growth and development"

Table 39.---Pearson correlations between subvariables of job characteristics, organizational climate, job satisfaction, and job performance.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1 JOB CHARACT.																								
2 Job charact. 1	.60*																							
3 Job charact. 2	.51*	.14																						
4 Job charact. 3	.56*	.16	.12																					
5 Job charact. 4	.50*	.13	-.02	.10																				
6 Job charact. 5	.56*	.14	.13	.17	.11																			
7 ORG. CLIMATE																								
8 Org. climate 1	.36*	.20*	.02	.38*	.20*	.17*																		
9 Org. climate 2	.38*	.13	-.01	.38*	.26*	.30*	.57*																	
10 Org. climate 3	-.05	.00	-.24*	.17*	.05	-.13	.51*	.03																
11 Org. climate 4	.31*	.30*	.14	.19*	.14	.07	.52*	.06	-.00															
12 JOB SATISF.	.10	-.02	.16	.05	-.03	.12	.51*	.08	.01	.04														
13 Job satisf. 1	.74*	.45*	.29*	.54*	.32*	.43*	.45*	.48*	-.02	.28*	.23*													
14 Job satisf. 2	.45*	.29*	.10	.26*	.24*	.35*	.29*	.41*	.01	.04	.15	.59*												
15 Job satisf. 3	.53*	.43*	.36*	.19*	.17*	.28*	.03	-.01	-.21*	.31*	-.01	.54*	.18*											
16 Job satisf. 4	.42*	.21*	.27*	.33*	.15	.19*	.49*	.38*	.06	.35*	.28*	.56*	.16	.07										
17 Job satisf. 5	.32*	.09	-.00	.43*	.21*	.15	.34*	.33*	.18*	.09	.11	.53*	.13	.05	.17*									
18 JOB SAT. (d)	.32*	.22*	.07	.25*	.11	.20*	.08	.21*	-.10	.04	-.10	.53*	.14	.16	.16*	.05								
19 Job sat. (d) 1	.40*	.23*	.04	.39*	.19*	.23*	.36*	.39*	.21*	.12	.01	.59*	.54*	.23*	.31*	.29*	.23*							
20 Job sat. (d) 2	.10	.07	-.21*	.23*	.17*	.01	.39*	.42*	.33*	.01	.04	.32*	.34*	-.23*	.29*	.44*	.02	.58*						
21 Job sat. (d) 3	.18*	.04	-.06	.25*	.17*	.10	.07	.14	.07	.07	-.15	.28*	.45*	.15	-.11	.25*	.01	.49*	.12					
22 Job sat. (d) 4	.35*	.22*	.08	.32*	.10	.25*	.27*	.29*	.13	.14	.02	.43*	.13	.11	.49*	.11	.39*	.51*	.21*	.08				
23 Job sat. (d) 5	.19*	.18*	.18*	.05	-.02	.11	.08	.01	.02	.10	.05	.33*	.25*	.46*	.11	.05	.03	.47*	.09	.05	.06			
24 Job sat. (d) 6	.28*	.24*	.13	.15	.08	.15	.08	.15	.05	.11	.05	.21*	.32*	.29*	.07	.11	.01	.49*	.13	.13	.02	.17*		
25 JOB PERF (e)	.08	.08	.05	.13	.06	.06	.15	.11	.08	-.05	.17*	.15	.09	.05	.10	.05	.23	.41*	.06	.02	.14	.03	.04	
26 Job perf (e) 1	.16	.08	.06	.06	.12	.12	.07	-.06	-.06	.15	.13	.15	-.00	.22*	.03	.13	.02	-.12	-.10	-.05	-.00	-.01	-.04	-.16
27 Job perf (e) 2	.17*	.09	.06	.12	.12	.08	.08	.04	-.02	.10	.05	.10	-.02	.13	.10	.11	-.04	.01	.04	.00	.09	-.03	.08	-.15
28 Job perf (e) 3	.14	.05	.20	-.01	.11	.13	-.02	-.09	-.06	.06	.05	.10	-.02	.17*	.01	.04	.04	-.11	-.14	-.13	.04	.04	-.09	-.04
29 JOB PERF (s)	.06	.04	-.02	.02	.05	.06	.09	-.10	-.07	.19*	.19*	.14	.00	.22*	-.04	.15	.05	-.17*	-.13	.01	-.12	-.04	-.08	-.16
30 Job perf (s) 1	.09	.07	.01	.04	.11	.02	.02	.06	.01	-.03	-.01	.14	-.03	.14	.06	.17*	.05	.01	.06	-.01	.02	-.02	.05	.02
31 Job perf (s) 2	.14	.11	.01	.09	.16	.01	.01	.03	.06	.03	-.10	.10	-.06	.13	.02	.14	.04	.01	.05	.01	.03	-.07	.07	.04
32 Job perf (s) 3	.05	.05	.01	.00	.05	.02	.03	.05	-.03	-.04	.08	.16	.02	.13	.08	.17	.07	-.03	-.07	-.01	-.01	.00	-.00	.00
	.05	.02	.00	.01	.08	.03	.00	.08	-.01	-.07	.01	.12	-.13	.11	.06	.15	.04	.01	-.04	-.04	.02	.01	.07	.01

*p < .001.

Underlined coefficients: p < .01.

Organizational climate 1: "Structural aspects of organizational climate"
 Organizational climate 2: "Freedom from supervisory arbitrariness and antisupervisory behavior"
 Organizational climate 3: "Climate for interpersonal relations"
 Organizational climate 4: "Climate for demanding but realistic work standards"

Job satisfaction 1: "Opportunity to be someone important"
 Job satisfaction 2: "Private attitudes that make the employee like his job"
 Job satisfaction 3: "Organizational characteristics affecting the employee's feelings about his job"
 Job satisfaction 4: "Feelings toward immediate superior"
 Job satisfaction 5: "Physical and social conditions"

Job satisfaction (d) d = operationalized in accordance with the discrepancy theory

Job satisfaction (d)1: "Attributes of a good job"
 Job satisfaction (d)2: "Job challenge and accomplishment"
 Job satisfaction (d)3: "Pleasant work group climate"
 Job satisfaction (d)4: "Independence on the job"
 Job satisfaction (d)5: "Freedom from job guilt"
 Job satisfaction (d)6: "Opportunity for variety"

Job performance e = employee ratings = self-ratings
 s = supervisory ratings

Job performance 1: Quantitative performance
 Job performance 2: Qualitative performance
 Job performance 3: Overall performance

The major variables were job characteristics, organizational climate, job satisfaction, and job performance. The triangles of the matrix show the correlations between a major variable and its subvariables, and between the subvariables within each major variable.

The correlations between subvariables and the corresponding major variable were all relatively high (mostly in the .50's), positive,

and statistically significant ($p < .001$). Such high correlation coefficients were expected because the subvariables naturally were parts of the corresponding major variable. The remaining correlation coefficients in the triangles of the matrix showed the intercorrelations among the factors or subvariables within each major variable. These coefficients were very low and mostly not significant at $p < .001$, as expected. This was to be expected because of the orthogonal rotation of the factor matrix.

Correlations between job characteristics and organizational climate.--The correlation between the composite measures of job characteristics and organizational climate was .36. The five correlations between the subvariables of job characteristics and the major variable, organizational climate, were also positive and statistically significant ($p < .001$), except for job characteristic 2, which showed no relationship to organizational climate. Job characteristic 2 had to do with the impact of one's work on other people. Dunham (1977) found similar results in a U.S. sample of 784 executives. The correlations between the major variable of organizational climate and the five core dimensions of job characteristics ranged from .12 to .24 in this U.S. sample.

Two of the four correlations between the composite variable job characteristics and the subvariables of organizational climate (.38 and .31) were also statistically significant at $p < .001$. Organizational climate 2 and Organizational climate 3 did not show any significant relationships with job characteristics.

Among the 20 subvariable (factor) correlations, 12 were statistically significant at $p < .01$. One of these correlations, that between

climate for "freedom from supervisory arbitrariness/antisupervisory behavior" and "impact of job on other people," was negative (-.24). The more impact one's work has on other people, the higher is the climate for supervisory arbitrariness, and vice versa. It is difficult to interpret this relationship; it may, however, be interpreted in terms of specific values, attitudes, and behaviors related to tribalism, favoritism, or the way decision-making power is applied.

Correlations between job characteristics and job satisfaction operationalized as "is now".--The correlation between the composite measures of job characteristics and job satisfaction was .74. The five correlations between the subvariables of job characteristics and the composite variable job satisfaction ("is now") were also statistically significant at $p < .001$. The same is true for the relationships between the composite variable job characteristics and the five satisfaction subvariables.

Among the 25 subvariable correlations, 18 were statistically significant at $p < .001$ and 2 at $p < .01$. In conclusion, the subvariable correlations supported fairly well the result of the overall zero-order correlation between job characteristics and job satisfaction operationalized as "is now."

Correlations between job characteristics and job satisfaction operationalized in accordance with the discrepancy theory.--The correlation between the composite measures of job characteristics and job satisfaction (discrepancy) was .39. Four of the five correlations between the subvariables of job characteristics and the composite variable job satisfaction were significant at $p < .001$. Four of the six correlations

between satisfaction subvariables and the composite variable of job characteristics were significant at $p < .0001$; two of the six correlations were not significant at $p < .01$.

Among the 30 subvariable correlations, only 15 were significant at $p < .01$. In conclusion, the subvariable correlations only partially supported the result of the overall zero-order correlation between job characteristics and job satisfaction operationalized in accordance with the discrepancy theory.

Correlations between job characteristics and job performance.--

The correlation between the composite measures of job characteristics and job performance was .16 ($p < .01$) for self-ratings of performance and .09 ($p < .05$) for supervisory ratings of performance. These correlations were low, and the subvariable correlations were even lower and mostly not significant. One relationship, between self-ratings of quantitative performance and the composite variable of job characteristics, showed a significant correlation ($r = .17$, $p < .001$). This, as well as the correlation between self-ratings of qualitative performance and job characteristics ($r = .14$), was in good agreement with the overall correlation of .16 for self-ratings of performance.

Correlations between organizational climate and job satisfaction ("is now").--

The correlation between these two composite variables was .45. Three of the four correlations between subvariables of organizational climate and the composite variable of job satisfaction were also significant at $p < .001$; the one that involved "freedom from supervisory arbitrariness and antisupervisory behavior" was not significant. Three of the five correlations between the composite variable of organizational

climate and satisfaction subvariables supported the correlation between the composite measures in that they showed a significant relationship ($p < .001$). In a U.S. sample of 784 executives, Dunham (1977) found somewhat higher correlations, and all were positive. The correlations between the composite variable of organizational climate and seven satisfaction aspects ranged from .25 to .54.

Among the 20 subvariable correlations, 9 were statistically significant at $p < .001$ and 1 at $p < .01$. The correlation between "freedom from supervisory arbitrariness and antisupervisory behavior" and "private attitudes that make the employee like his job" was negative ($r = -.21$, $p < .001$). As discussed earlier, climate for "freedom from supervisory arbitrariness and antisupervisory behavior" may have particular values related to tribalism, or ways of making decisions, that made this relationship negative.

In conclusion, the subvariable correlations only partially supported the overall zero-order correlation between organizational climate and job satisfaction operationalized in accordance with the "is now" approach. These subvariable correlations seem to be of the same size or a little smaller than results from samples in industrialized Western societies. Friedlander and Margulies (1969), for example, found in a sample of 95 respondents from the electronics industry that 18 or 24 correlations between subvariables of satisfaction and organizational climate were significant at $p < .05$. These 18 correlations ranged from .22 to .64. Schneider and Snyder (1975) obtained similar results in a U.S. sample of 522 respondents from insurance agencies. The correlations

between subvariables of organizational climate and job satisfaction ranged from .00 to .55.

Correlations between organizational climate and job satisfaction ("should be - is now").--The correlation between these two composite variables was .36. The subvariable correlations did not in any consistent way support the major result of the overall correlation, even though 8 of 34 correlations were significant at $p < .001$.

Correlations between organizational climate and job performance.--The correlation between the composite measures of organizational climate and self-ratings of job performance was .07 ($p = .113$), and .02 ($p = .386$) for supervisory ratings of job performance. Most of the subvariable correlations were consistent with this pattern. Only 2 of the 38 correlations were significant at $p < .001$, even though these two correlations were also rather low (both .19). These were the relationship between self ratings of one item, "overall job performance," and "climate for interpersonal relations" and "climate for demanding but realistic work standards." Job performance as rated by the incumbents themselves was positively related to aspects of interpersonal relations, such as communication, cooperation, and trust and confidence. Furthermore, job performance (self-ratings) was positively related to "climate for demanding but realistic work standards," such as clearly stated performance standards, good work planning, employees' influence on own work situations, and employee acceptance of job responsibility. "Climate for interpersonal relations" was also positively related to the composite variable of job performance (self-rated), computed as the arithmetic mean of the three performance items ($r = .15$, $p < .01$).

Correlations between job satisfaction and job performance.--

The correlation between the composite measures of job satisfaction ("is now") and job performance was .15 ($p < .01$) for self-ratings of performance and .14 ($p < .01$) for supervisory ratings of performance. The correlations when satisfaction was operationalized as a discrepancy score were -.12 and -.01, respectively.

1. Job satisfaction operationalized as "is now." The highest positive subvariable correlations were also found for the "is now" operationalization of satisfaction. Only one of the five correlations between satisfaction subvariables ("is now") and the composite variable of job performance (self-ratings) was significant: the relationship with "private attitudes that make the employee like his job" ($r = .22$, $p < .001$). This aspect of job satisfaction also provided significant correlations with qualitative job performance and with overall job performance. The correlations between the composite satisfaction variable and overall self-rated job performance ($r = .14$, $p < .01$) and between satisfaction with "feelings toward immediate superior" and overall self-rated performance ($r = .15$, $p < .01$) both supported the result of the correlation of .15 between the composite measures of job satisfaction and job performance (self-rated).

In considering supervisory ratings of job performance, satisfaction with "private attitudes that make the employee like his job" and satisfaction with "feelings toward immediate superior" both were significantly related to performance ($r = .14$, $p < .01$ and $r = .17$, $p < .001$, respectively). The qualitative aspect of performance was also related to the composite variable of job satisfaction ($r = .16$, $p < .01$).

Somewhat higher correlations between supervisory ratings of performance and satisfaction aspects have been found in samples from industrialized societies. For example, Kesselman, Wood, and Hagen (1974) found in a U.S. sample that supervisory ratings were correlated .58 ($p < .01$) with satisfaction with work itself, .39 ($p < .05$) with satisfaction with pay, .44 ($p < .01$) with satisfaction with promotion, and .21 (not significant at $p = .05$) with satisfaction with one's supervisor.

Of the 15 subvariable correlations, only four were significant at $p < .01$. It is interesting that satisfaction with "feelings toward immediate superior" was also significantly related to all the job performance subvariables ($r = .14$, $r = .17$, $r = .15$, $p < .01$).

2. Job satisfaction operationalized as "should be - is now."

There was no significant positive relationship between job performance and satisfaction when the latter variable was operationalized in accordance with the discrepancy theory. Most of the correlations were low and negative for self-rated performance, and one of them ($r = -.17$) was even significant at $p < .001$. Six others were significant at $p < .01$. It is difficult to interpret these specific negative correlations. For supervisory ratings of job performance, none of the 28 correlations was significant at $p < .01$.

In conclusion, when job satisfaction was operationalized in accordance with the discrepancy theory of satisfaction, no consistent significant relationship was found between job performance and job satisfaction. When satisfaction was operationalized in accordance with the "is now" approach, a weak positive correlation was found between job performance and satisfaction, both for self- and supervisor-rated

performance. Only two of the five satisfaction aspects showed a significant relationship with aspects of job performance. These two aspects were satisfaction with "private attitudes that make the employee like his job" and satisfaction with "feelings toward immediate superior."

Correlations Based on Subsamples:
Higher Education Institutions
and Production Firms

Hypothesis 5 stated that there is a stronger relationship between job satisfaction and performance across higher education institutions than across production firms. The factor analysis was based on the total sample. When Pearson correlations were computed for the two subsamples, higher education institutions and production firms, only the composite correlation pattern (for the major variables) was shown because no factor analysis was done for the two subsamples. The factor structure would probably change if factor analysis were done for the two types of organizations separately. Furthermore, only job satisfaction operationalized in accordance with the "is now" approach was included because the operationalization according to the discrepancy theory showed rather low and partially negative correlations with the other major variables.

As shown in Table 40, the zero-order correlations for the two types of organizations did not show much deviation from the corresponding correlations for the total sample. Three of the four major variables--job characteristics, organizational climate, and job satisfaction--were also significantly ($p < .001$) correlated with each other for the subsamples. The correlation between job characteristics

and organizational climate increased from .36 for the total sample to .51 and .45 for the education and production organizations, respectively.

Table 40.--Pearson correlations between job characteristics, organizational climate, job satisfaction, and job performance for education organizations and production firms.

Major Variable	Type of Organiz.	Job Characteristics	Organiz. Climate	Job Satisfaction ("Is Now")
Job characteristics	Educ. Prod.	1.00 1.00		
Organizational climate	Educ. Prod.	.51* (64) .45* (165)	1.00 1.00	
Job satisfaction	Educ. Prod.	.72* (68) .78* (195)	.56* (57) .49* (179)	1.00 1.00
Job performance (self-ratings)	Educ. Prod.	.01 (87) .21* (198)	-.18 (71) .07 (176)	.01 (74) .14** (205)
Job performance (superv. ratings)	Educ. Prod.	.11 (94) .05 (200)	.00 (69) .12 (178)	.26** (71) .07 (208)

*p < .001.

**p < .05.

Relationships between each of these three variables and the fourth variable, job performance, showed a few smaller deviations than those based on the total sample. Self-ratings of job performance were significantly related to job characteristics for the total sample ($r = .16$, $p < .01$). Self-ratings of job performance showed no significant relationship with job characteristics in higher education institutions. However, for production firms, this relationship was positive

and significant ($r = .21, p < .001$). Supervisory ratings of job performance showed no significant relationship with job characteristics for either of the two types of organizations, in accordance with the total sample.

Just as in the total sample, no significant relationship was found between organizational climate and job performance for either of the two types of organizations.

The relationship between job satisfaction and job performance changed from the total sample to the subsamples. Self-ratings of job performance showed no relationship at all with job satisfaction in educational institutions, whereas for production firms this relationship was positive but relatively weak ($r = .14, p < .05$). For supervisory ratings of job performance, this relationship was positive in educational institutions ($r = .26, p < .05$) and near zero in production firms ($r = .07$). Hypothesis 5 was retained for supervisory ratings of job performance, but not for self-ratings of performance.

The relatively low correlation between job satisfaction and performance found in this research was in agreement with most other research investigations on the satisfaction/performance relationship, as described earlier. There are many reasons and hypotheses why job satisfaction and performance need not covary under all conditions. Triandis (1959) hypothesized that organizational pressure for high production influences both job satisfaction and performance, but not in the same fashion. Performance is likely to be curvilinearly related to pressure for production. That is, for lower amounts of pressure, performance is a monotonous, increasing function of pressure; however,

for higher amounts of pressure, performance is a monotonous, decreasing function of production pressure. As regards job satisfaction, Triandis argued that job satisfaction will decrease with increasing production pressure, irrespective of the concomitant variation in performance. This is in line with the work adjustment theory (Dawis et al., 1968), which agrees with the notion that job performance and satisfaction need not covary under all conditions. The satisfaction/performance model of March and Simon (1958) was based on the need deprivation theory and hypothesized that job performance is a function of the degree of dissatisfaction experienced, as well as of the perceived instrumentality of performance for the attainment of valued rewards. According to March and Simon's model, dissatisfaction is a necessary but not sufficient condition for performance. Dissatisfaction is necessary to activate the organism toward performance behavior. Dissatisfaction is not sufficient because a discontented person may not perceive performance as leading to satisfaction, or he/she may perceive nonperformance as leading to greater perceived satisfaction. Job satisfaction may be a result of rewards not directly related to performance, such as fringe benefits, more responsibility given to senior employees, or other advantages related to length of service in the organization. Or satisfaction need not necessarily result because performance rewards may not be in line with the anticipated consequences of such rewards. These are some possible reasons or interpretations why the relationship found between job satisfaction and performance was so weak.

One should also realize, however, that the satisfaction/performance relationship may be associated with a large number of

covariates. Potential covariates are investigated later in this chapter. Much theoretical work and certainly empirical studies have not accounted for a sufficient number of the variables that may codetermine strength and direction of the satisfaction/performance relationship. Forbes and Barrett (1978) investigated individual abilities and task demands as two variables affecting the satisfaction/performance relationship. The authors argued that not only the amount of ability but also the nature of the ability is related to this relationship. Certain performance-related abilities are also related to job satisfaction. In addition, the functional relationship between these abilities and satisfaction seems to vary with the level of task demands, according to Forbes and Barrett. Their findings present an important problem for personnel selection. It seems difficult, if not impossible, to maximize both job satisfaction and performance at the same time in the traditional selection philosophy. For jobs that are simple to do, the most capable employees will be the least satisfied. A choice between maximizing performance or satisfaction has to be made, both for simple and moderately difficult tasks. This represents a zero-sum gain in terms of satisfaction/performance output. Maximizing performance means selecting high-ability applicants. Maximizing satisfaction means selecting applicants for whom there is a match between ability level and task complexity. One way to optimize both satisfaction and performance (a non-zero-sum gain) is to design the job so that it is challenging for the more capable applicants in the sample from which selection is made.

The weak relationship found between job satisfaction and job performance in Tanzanian organizations may have an effect on productivity and organizational effectiveness. Tanzanian organizations may want to develop a stronger relationship between job satisfaction and performance because a strong relationship seems to indicate that consistent rewards contingent upon job performance exist (Wanous, 1974). This detected weak relationship could be helpful for Tanzanian organizations in identifying relevant factors to increase job performance and organizational effectiveness. Development of reward systems that support a causal model in which higher job performance and organizational effectiveness are outputs may be beneficial for further development of Tanzanian organizations. Essential to a stronger relationship between job satisfaction and performance is a sound performance-appraisal system and a consistent and clearly formulated and communicated reward system. Subjective appraisal of performance and inconsistent and unfair administration of rewards do not contribute to a strong relationship between job performance and satisfaction. Building and administering sound and equitable systems of performance appraisal and rewards presumably have the potential of influencing the effort/reward and performance/reward probabilities. This, in turn, may increase the satisfaction/performance relationship.

Variation in Employee-Perceived Organizational Climate Versus Job Satisfaction

Hypothesis 6 stated: Employees of an organization agree more on perceptions of organizational climate than on perceptions of job satisfaction. If climate is conceptualized and operationalized in

accordance with the organization/description orientation, and satisfaction in accordance with the individual/evaluation orientation, it is reasonable to believe that personalistic evaluations will vary more among a group of employees than will organizational descriptions. To test this hypothesis, an intraclass correlation was computed for job satisfaction, just as it was for organizational climate. Then the two intraclass correlation coefficients were compared. If the coefficient for job satisfaction was smaller than the coefficient for organizational climate, employees agreed more on perceptions of organizational climate than on job satisfaction.

Table 41.--Between-group and within-group variances of job satisfaction for eight organizations.

Source of Variation	df	Sum of Squares	Mean Squares	F-ratio	Significance of F
Between groups	7	20.1680	2.8811	4.751	.0000
Within groups	279	169.2018	.6065		
Total	286	189.3598			

Based on cell means of $s_1 = 32$, $s_2 = 63$, $s_3 = 45$, $s_4 = 46$, $s_5 = 27$, $s_6 = 16$, $s_7 = 14$, and $s_8 = 44$, the harmonic mean was calculated as it was for inter- and intraorganizational climate differences:

$$\bar{s}_h = \frac{pq}{\sum \frac{1}{s_{ij}}} = \frac{1 \cdot 8}{\sum_{j=1}^8 \frac{1}{s_j}} = \frac{8}{.285} = 28.09 \approx \underline{28}$$

The intraclass correlation coefficient for job satisfaction was also calculated as before:

$$r_i = \frac{MS_0 - MS_{S:0}}{MS_0 + (s-1)MS_{S:0}} = \frac{2.8811 - (.6065)}{2.8811 + (28-1)(.6065)} = .12$$

This correlation coefficient was significantly greater than zero ($F = 4.7511$, $p = .0000$). As hypothesized, the intraclass correlation coefficient for job satisfaction was smaller than the corresponding coefficient for organizational climate: .12 versus .26. As this difference in intraclass correlation was not tested for statistical significance, one can only state that employees tended to agree more on perceptions of organizational climate than on job satisfaction. Hence Hypothesis 6 received at least some tentative support. This result was in agreement with a study conducted by Schneider and Snyder (1975). The authors investigated 50 life insurance agencies ($n = 522$) and found that employees agreed more on the climate of their agency than they did on their own satisfaction.

Correlates of Job Satisfaction

Differences in Job Satisfaction Between Production Firms and Higher Education Institutions

It was hypothesized (Hypothesis 7) that the level of job satisfaction would be higher in educational institutions than in production firms. The reasoning behind this hypothesis was that there are more white-collar workers in educational organizations, the average salary level is higher because of more academic employees in higher education than in production organizations, and the job content in Tanzanian higher education organizations provides more challenging and enriched work. A t-test revealed that the hypothesis was only partially

confirmed. Job satisfaction was operationalized in accordance with the "is now" approach.

As Table 42 shows, in Tanzania there was a tendency for employees in higher education institutions to experience higher levels of job satisfaction than those in production firms. The t-test revealed, however, that only two of the five job satisfaction aspects were perceived as significantly higher in educational institutions. Job satisfaction aspect No. 2 was "private attitudes that make the employee like his job"--that is, satisfaction with types and varieties of tasks and activities, satisfaction with the degree of freedom at work, and satisfaction with accomplishments. Job satisfaction aspect No. 5 was "physical and social conditions" on the job--that is, satisfaction with physical working conditions, satisfaction with opportunity of socializing at work, and satisfaction with opportunities of leisure activities external to the work environment.

The proportion of white-collar workers was much higher in educational organizations than in production firms. This means "cleaner" work in the former type of organization. It also means higher average educational as well as position level among the employees in educational organizations relative to production firms. These statements probably add up to a feeling among employees in higher education institutions that they receive more rewards, both extrinsic and intrinsic. The average wage and salary level is higher than in production firms, and there is reason to believe that in a poor country like Tanzania, the higher the pay, the more opportunities and real leisure activities employees will enjoy in the community. Also, intrinsic rewards inherent

Table 42.--t-test for job satisfaction means in production firms and in higher education institutions.

Job Satisfaction Aspects	Type of Organization	No. of Cases	Mean	df	t-value	Significance (two-tailed test)
Opportunity to be someone important	Prod. firm Educ. org.	226 85	3.79 3.85	309	- .45	.66
Private attitudes that make the employee like his job	Prod. firm Educ. org.	219 78	4.09 4.48	295	-3.29	.001
Organizational characteristics affecting the employee's feelings about his job	Prod. firm Educ. org.	229 85	3.91 3.89	312	.18	.86
Feelings toward immediate superior	Prod. firm Educ. org.	229 85	3.89 3.82	312	.41	.68
Physical and social conditions	Prod. firm Educ. org.	230 86	3.45 3.89	314	-2.97	.003

in the job characteristics (the core dimensions), such as autonomy, variety of tasks, challenging tasks, good opportunities of achievement, personal growth, and development, are probably better in higher education institutions than in production firms, and hence contributed to higher experienced job satisfaction, at least on the relevant aspects of satisfaction.

In contrast to the findings, many of the academics at higher education institutions in Tanzania articulated that they would prefer to go into a higher position in a noneducational institution. The status in terms of salary, benefits, and influence (authority and power) was judged to be higher in production firms and other noneducational institutions. These articulations and desires among academics of higher education institutions indicated that their own influence and authority was not perceived to be as great as for those colleagues working in production firms. This assertion received some support from the data in Table 42. The job satisfaction aspect, "opportunity to be someone important," was not perceived to be higher in education than in business. It is a fact that the salary and fringe benefits were better for higher management positions in the production industry than for associate professors and professors in higher education institutions. In addition, it was probably true that young academics needed to work harder and wait longer to qualify for a higher academic position at a higher education institution than to qualify for a higher management position in business. In spite of this effect, employees in higher education tended to be generally more satisfied with their jobs than were employees in production firms. It should be emphasized that

the respondents in the former type of organization did not constitute academic staff only, but also administrators and office personnel who satisfied the criteria for being a member of the defined population (Chapter III). Hypothesis 7 received partial support.

The question of whether educational and position level really are correlates of job satisfaction needs to be investigated to continue the comparison between higher education institutions and production firms as regards job satisfaction. This is done in the next section.

Demographic Variables as Correlates of Job Satisfaction

High or reasonably high job satisfaction among organizational members is usually a goal of most modern organizations. There are many reasons for this. First of all, job satisfaction is positively correlated to job performance, and performance is part and parcel of any organization's survival. Second, too-low job satisfaction means high turnover and increased personnel costs in terms of hiring and training of new employees. Job performance, job characteristics, and organizational climate were already investigated as correlates of job satisfaction. Investigations also have shown that job satisfaction is positively associated with some demographic variables and also with individual variables that more or less may be related to the job itself (Glenn, Taylor, & Weaver, 1977; Lawler, 1971; MacEachron, 1977; McDonald & Gunderson, 1974; O'Reilley & Roberts, 1973; O'Toole et al., 1973; Robinson, 1969; Weaver, 1977, 1978, 1980). In this section, the following demographic or demographic-related variables are investigated in terms of their possible relationship with job satisfaction:

age, educational level, length of experience in the organization, position level, number of financial dependents, marital status, and sex. The last two variables were measured at the nominal level, but because they are dichotomous, Pearson correlations could also have been computed for these variables. In spite of this, a t-test was used to analyze the relationship between these two variables and job satisfaction.

Table 43 shows the correlation matrix that was used to test Hypothesis 8. The matrix shows that only educational level and position level were significantly related to job satisfaction. Education was positively related to the satisfaction aspects, "private attitudes that make the employee like his job" and "physical and social conditions," and to the composite satisfaction measure. These three correlations were .25 ($p < .001$), .21 ($p < .001$), and .16 ($p < .01$), respectively. Position level was positively related to the satisfaction aspects, "opportunity to be someone important," "private attitudes that make the employee like his job," and "physical and social conditions," and to the composite satisfaction measure. These four correlations were .17 ($p < .01$), .26 ($p < .001$), .20 ($p < .001$), and .18 ($p < .001$), respectively. Educational level and position level were highly intercorrelated (.64), so one would expect that if one had a positive relationship with job satisfaction, the other would too.

The established relationship between job satisfaction and position level in Tanzanian organizations was in accord with the trend of research results obtained by MacEachron (1977) and Weaver (1978). The established positive relationship between job satisfaction and education

Table 43.--Pearson correlations between job satisfaction and demographic variables, and between demographic variables.

Job Satisfaction Aspects	Age	Educ. Level	No. of Years in the Org.	Position Level	No. of Dependents
Opportunity to be someone important	-.00 (309)	.12*** (310)	.04 (309)	.17** (302)	-.04 (306)
Private attitudes that make the employee like his job	.05 (295)	.25* (296)	.03 (295)	.26* (289)	-.09 (293)
Organizational characteristics affecting the employee's feelings about his job	.01 (312)	.02 (313)	.11*** (312)	.05 (306)	-.08 (310)
Feelings toward immediate superior	-.06 (312)	.04 (313)	.04 (312)	-.03 (305)	-.07 (309)
Physical and social conditions	.08 (314)	.21* (315)	-.01 (314)	.20* (307)	-.16** (311)
Composite measure of job satisfaction	.02 (285)	.16*** (286)	.05 (285)	.18* (279)	-.10 (283)
Age	1.00				
Educ. level	.05 (334)	1.00			
No. of years in the organization	.38* (333)	-.21* (334)	1.00		
Position level	.23* (325)	.64* (326)	-.01 (326)	1.00	
No. of dependents	.26* (329)	-.21* (330)	.16** (330)	-.20* (326)	1.00

*p < .001.

**p < .01.

***p < .05.

in the Tanzanian work culture was in line with research done annually from 1972 to 1978 in the United States (Weaver, 1978). However, other investigations have found contradicting relationships between job satisfaction and education. McDonald and Gunderson (1974) found a negative relationship ($-.09, p < .05$) in a large sample of Navy enlisted men. Weaver (1978) found no relationship between satisfaction and education for black Americans ($-.04, n.s.$), and a low positive relationship for white Americans ($.07, p < .05$). James and Jones (1980) found that job satisfaction was negatively correlated with education ($r = -.18, p < .01$).

Number of dependents (i.e., the number of relatives and other persons employees have to support with money, food, clothes, or other items) showed a slightly negative relationship with job satisfaction. However, only one of these six correlations was significant--that of satisfaction with "physical and social conditions," including satisfaction with "opportunities of leisure activities external to the work environment" ($-.16, p < .01$). The more dependents employees had, the less satisfied they were with this aspect of the job.

In the present research, no relationship was found between job satisfaction and age, contrary to the findings of other investigations (Glenn, Taylor, & Weaver, 1977; McDonald & Gunderson, 1974; Weaver, 1978, 1980), which reported correlations ranging from .19 to .25 ($p < .01$). A national U.S. survey (Quinn, Staines, & McCollough, 1974) and other organizational studies (Gibson & Klein, 1970; Hulin & Smith, 1965) have also reported positive relationships between satisfaction and age. It is difficult to explain the lack of such a

relationship in the Tanzanian study. However, it is generally thought that many middle-aged and older employees in Tanzanian organizations have lower education than younger organizational members; hence older employees will not necessarily receive as many extrinsic rewards (pay, promotions, benefits, authority, prestige) as younger and better-educated Tanzanians. However, Table 43 showed no relationship between age and education. The proposed explanation, therefore, seems not to be feasible. However, the correlation between education and number of years worked in the organization was negative ($-.21, p < .001$).

There was no correlation between number of years in the organization and job satisfaction, except for the satisfaction aspect, "organizational characteristics affecting the employee's feeling about his job" ($r = .11, p < .05$). There is probably a slight tendency that the longer the employee stays in the organization, the greater are the loyalties and identities to that particular organizational culture. Then, one implication would be that long seniority within the organization makes the employee more satisfied with organizational characteristics affecting his job feelings. Hypothesis 7 received only partial support.

The intercorrelations among the demographic variables were also shown in Table 43. As expected, age was positively and significantly related to number of years spent in the organization, position level, and number of dependents. Furthermore, educational level and position level were correlated, as expected ($.64, p < .001$). It is interesting that the correlation between educational level and number of dependents was negative ($-.21, p < .001$).

Job satisfaction and higher education institutions.--The finding that both educational level and position level were correlates of job satisfaction gives more confidence in the interpretations described in the section on Correlates of Job Satisfaction. The total reward pool (both intrinsic and extrinsic) was probably richer in higher education institutions than in production firms in the Tanzanian culture. One direct reason for this may be that the average educational and position levels were higher in the former types of organizations. The proportion of positions at the lowest and lower levels in educational institutions was much smaller than in production firms. And it was found that higher education went together with higher position. Furthermore, higher position level means more and better extrinsic rewards such as pay, fringe benefits, working conditions, and opportunities for leisure activities. Higher position level also means more and better intrinsic rewards, such as influence, power, responsibility, status and prestige, self-esteem, challenging and interesting tasks, and self-realization.

Job characteristics and other conditions at higher education institutions are probably such that this class of organization provides a better learning environment and more challenging tasks than do production firms. The question of organizational health in general, and of individual satisfaction and performance in particular, is primarily an issue of learning and development on the job. Education, training, and development are means to build organizations as learning environments in which employees perceive their work as a succession of continuous learning experiences. To build and develop organizations into

effective learning environments, the various subsystems of an organization (technical, administrative) must be designed in such a way that they are conducive to both human growth and organizational effectiveness. According to some educationists and organization psychologists, an integration of human needs and organizational requirements is possible (Argyris, 1964; Knowles, 1979; McGregor, 1960). Furthermore, the organizational subsystems need to be related to each other in optimizing human growth and organizational effectiveness because the subsystems are strongly interdependent. In this respect, higher education organizations in the Tanzanian culture probably provide a more effective environment for continuous learning, growth, and development than production firms do.

The organization as an open social system has many paths available in producing a given outcome or in developing the learning environment. Pedagogically, it is important to realize the characteristic of equifinality of open systems. It is also important to take into account that the organization as an effective learning environment is characterized by feedback loops, negative entropy, homeostasis, differentiation, and a genuine willingness to work through conflicts and other problems with an open mind.

From an educational/developmental point of view, it is also important to realize that not only does the organization influence the individual through the process of acculturation and socialization, but also that the individual employee has the potential to influence the organization through the process of innovation and development. These two processes are not mutually exclusive. The same employee is both

influenced by and influences the organization. This coexistence is the basis for development of the organization as a learning environment--an environment that is a prerequisite for integrating individual needs and organizational requirements. Schein (in Kolb et al., 1974) argued that the employee's movement is basically a process of learning or socialization during which the organizational influence on the employee is at a maximum, followed by a process of performance during which the employee's influence on the organization is at a maximum. These two processes are then followed by a process of either becoming obsolete or learning new skills that lead to further movement. According to the previous data on satisfaction in the two types of organizations and on correlates of job satisfaction, it seems likely that higher education institutions are better learning communities for their employees as well as better donors of extrinsic rewards than are production firms.

Knowles (1979) discussed the organization as a learning community that encourages, supports, and provides resources for its members to grow and develop continuously throughout their lives. The author emphasized modern assumptions about education and provided guidelines for redefining the roles of professional organizations in the continuing education of their members. The first assumption was that the purpose of education is to produce a competent person who can apply knowledge to solve a variety of life problems. Education, training, and work experience should produce competent persons by having them acquire their knowledge in the context of its application. This assumption has implications for the modern organization as a learning environment. Organizations require high job performance of their employees.

But then organizations need to expose their employees to education and training as a process of competency development, and they need to construct models of the competencies required for performing the various roles in the organization. The point is to see education and training as a process of building up the employees' competence rather than accumulating credits, even though there is not necessarily a contradiction between these two approaches. Modern organizations are increasingly concerned about getting their employees excited about learning.

Another assumption about modern organizational learning is that education and training are processes through which a learner acquires knowledge, skills, attitudes, and values, with help from a facilitator or resource person. Decisions about what and how to learn are made through mutual negotiations between the resource person and the employee or learner. The employee's role is to be active, take initiative, inquire, and perform. The role of the resource person is to guide and monitor, and to provide the resources necessary for the employee to acquire valuable and effective learning experiences. Education is seen as process-centered rather than content-centered. A consequence of this assumption for modern organizations is that they have a responsibility to provide learning experiences in which employees gain the skills of self-directed learning.

A third assumption is that learning is most effective when a rich variety of learning resources is available to the organizational members. Organizations as learning environments or "educative environments" are systems of learning resources. Within such a conception, new opportunities to learn at work will be opened up. Then learning

becomes more than scheduled classes, courses, and workshops. This assumption has implications for the organization. Emphasis has to be placed on new delivery systems, such as learning networks, multi-media modules, and dial-access systems. All relevant learning resources must be made available to the organization and its members. The organizational climate must be conducive to continuous learning on the job; that is, the organization must promote mutual trust and confidence, effective conflict-resolution mechanisms, warmth, support, collaboration, and openness. Such a climate will contribute greatly to the development of the organization as an effective learning environment.

A fourth assumption is that employees, particularly at a professional level, become obsolete unless they engage in a lifelong program for growth and development. The implication of this assumption for organizations is that strategies for increasing the awareness of the need for continuous learning must be developed. Motivation research suggests that motivation is not the largest problem; rather, the problem is the various blocks to learning that exist, such as fear of failure.

The fifth assumption is that each country and its organizations have an obligation to be concerned with continuing education because of accelerating change in turbulent organizational and societal environments. This implies that organizations need to accept continuing education and build the necessary environment for further employee learning, growth, and development.

The last assumption is a transition from a traditional pedagogical model of learning to an andragogical model in which the employee is

defined as a self-directing organism who is able to take on the role of diagnosing his/her own needs for learning and managing all the steps and resources in the learning process with help of a facilitator. Adult educational psychology has shown that this model results in more effective learning (Knowles, 1979). An important implication for the organization is its responsibility to inform the employees of these modern concepts of adult learning and to apply them to its own internal training programs. The point is that so many adults are taught as if they still were children. Even many adult learners themselves want to be taught the same way as they were taught 20 to 40 years before, because this is the only way they know.

In conclusion, besides extrinsic rewards, intrinsic rewards related to the organization as a learning environment seem to be superior in higher education organizations. Employees use this superior environment to further personal learning, growth, and development.

Investigation of Marital Status and Sex as Potential Correlates of Job Satisfaction

A t-test was used to determine whether the nominal variables, marital status and sex, were related to job satisfaction. As Table 44 shows, there was no significant difference in job satisfaction between married and unmarried employees. The trend in all the satisfaction means, however, was that married employees were slightly more satisfied with their job aspects than were unmarried employees. In a study of several thousand Navy enlisted men in the U.S., McDonald and Gunderson (1974) found that married men tended to be more satisfied with their work than unmarried men ($r = .06$, $p < .05$).

Table 44.--t-test for job satisfaction means, controlled for marital status.

	Marital Status	No. of Cases	Mean	S.D.	t-value	df	Significance Level (two-tailed test)
Opportunity to be someone important	Married	193	3.8169	.998	.17	304	.86
	Unmarried	113	3.7965	.980			
Private attitudes that make the employee like his job	Married	185	4.2088	.894	.25	291	.80
	Unmarried	108	4.1806	.951			
Organizational characteristics affecting the employee's feelings about his job	Married	185	3.9410	1.017	.67	307	.51
	Unmarried	114	3.8596	1.068			
Feelings toward immediate superior	Married	195	3.8923	1.294	.34	307	.74
	Unmarried	114	3.8421	1.189			
Physical and social conditions	Married	195	3.5897	1.236	.35	309	.73
	Unmarried	116	3.5402	1.131			
Composite measure of job satisfaction	Married	178	3.9455	.840	.36	281	.72
	Unmarried	105	3.9087	.786			

Table 45 shows that there was no significant difference in job satisfaction between male and female employees, except for satisfaction with "feelings toward immediate superior." Females were more satisfied than males with this satisfaction facet ($p < .05$), and nearly all the "immediate superiors" in the Tanzanian study were males. In two studies, Weaver (1978, 1980) found no sex difference as regards job satisfaction. The overall result in the Tanzanian sample was in agreement with the cited U.S. studies. As regards the job facet, "feelings toward immediate superior," there has been some evidence in Western societies that female employees tend to be less satisfied with a female superior, probably because of more negative feelings of direct competition than they experience with male superiors. If this is the case, the reason may well be that females, traditionally, have been strongly dependent on and subordinate to males, and they tend to continue being more comfortable with this dependent work role. It was highly evident that this was true in Tanzanian organizations, too. Whether or not this is a valid explanation can only be determined through additional research in Tanzania.

Testing of the Linearity Assumption
Underlying the Zero-Order Correlations
Between Job Satisfaction and the Two
Demographic Variables, Education
and Position Level

A linear model is the underlying assumption of zero-order correlations. Whether the observed relationships are truly linear or not can be investigated with ANOVA and Scheffé post-hoc comparisons. (See Tables 46 and 47.)

Table 45.--t-test for job satisfaction means, controlled for sex.

	Sex Group	No. of Cases	Mean	S.D.	t-value	df	Significance Level (two-tailed test)
Opportunity to be someone important	Male Female	276 27	3.8158 3.6976	1.009 .815	.59	301	.56
Private attitudes that make the employee like his job	Male Female	266 25	4.1800 4.2300	.924 .819	-.26	289	.79
Organizational charac- teristics affecting the employee's feelings about his job	Male Female	277 29	3.8764 4.1724	1.024 1.142	-1.46	304	.14
Feelings toward immediate superior	Male Female	276 30	3.8043 4.3778	1.215 1.403	-2.42	304	.02
Physical and social conditions	Male Female	279 29	3.5269 3.9655	1.188 1.255	-1.88	306	.06
Composite measure of job satisfaction	Male Female	257 24	3.9084 4.0677	.823 .787	-.91	279	.36

Table 46.--One-way ANOVA and Scheffé post-hoc comparisons of job satisfaction, controlled for education.

	Means			ANOVA		Scheffé Post-Hoc Comparison
	Ed. 1 = High	Ed. 2 = Intermed.	Ed. 3 = Low	N	F	p
Opportunity to be someone important	3.83	4.07	3.69	309	3.737	.02
Private attitudes that make the employee like his job	4.46	4.37	4.03	295	7.051	.001
Organizational characteristics affecting the employee's feelings about his job	3.77	4.09	3.88	312	1.779	.17
Feelings toward immediate superior	3.65	4.03	3.88	312	1.658	.19
Physical and social conditions	3.85	3.84	3.35	314	6.738	.001
Composite measure of job satisfaction	4.00	4.17	3.82	285	4.372	.013

Significance level: $p_{\text{Scheffé}} = .05$.

Ed. 2 > Ed. 3

Ed. 1 > Ed. 3;
Ed. 2 > Ed. 3

n.s.

n.s.

Ed. 1 > Ed. 3;
Ed. 2 > Ed. 3

Ed. 2 > Ed. 3

not sufficient justification for the investigation and the results are not reliable.

Date	Time	Temperature	
		Air	Water

1900-1905 1910-1915 1920-1925 1930-1935 1940-1945 1950-1955 1960-1965 1970-1975 1980-1985 1990-1995 2000-2005 2010-2015 2020-2025

1900-1905 1910-1915 1920-1925 1930-1935 1940-1945 1950-1955 1960-1965 1970-1975 1980-1985 1990-1995 2000-2005 2010-2015 2020-2025

1900-1905 1910-1915 1920-1925 1930-1935 1940-1945 1950-1955 1960-1965 1970-1975 1980-1985 1990-1995 2000-2005 2010-2015 2020-2025

1900-1905 1910-1915 1920-1925 1930-1935 1940-1945 1950-1955 1960-1965 1970-1975 1980-1985 1990-1995 2000-2005 2010-2015 2020-2025

1900-1905 1910-1915 1920-1925 1930-1935 1940-1945 1950-1955 1960-1965 1970-1975 1980-1985 1990-1995 2000-2005 2010-2015 2020-2025

1900-1905 1910-1915 1920-1925 1930-1935 1940-1945 1950-1955 1960-1965 1970-1975 1980-1985 1990-1995 2000-2005 2010-2015 2020-2025

1900-1905 1910-1915 1920-1925 1930-1935 1940-1945 1950-1955 1960-1965 1970-1975 1980-1985 1990-1995 2000-2005 2010-2015 2020-2025

Table 47.--One-way ANOVA and Scheffé post-hoc comparisons of job satisfaction, controlled for position level.

	Means			ANOVA		Scheffé Post-Hoc Comparison
	Pos. 1 = High	Pos. 2 = Intermed.	Pos. 3 = Low	N	F	
Opportunity to be someone important	3.98	3.85	3.56	301	3.723	.03 Pos. 1 > Pos. 3
Private attitudes that make the employee like his job	4.44	4.26	3.81	288	10.648	.000 Pos. 1 > Pos. 3; Pos. 2 > Pos. 3
Organizational characteristics affecting the employee's feelings about his job	3.90	3.96	3.77	305	.890	.41 n.s.
Feelings toward immediate superior	3.74	3.95	3.84	304	.774	.46 n.s.
Physical and social conditions	3.84	3.57	3.28	306	4.541	.01 Pos. 1 > Pos. 3
Composite measure of job satisfaction	4.06	3.99	3.68	278	4.787	.009 Pos. 1 > Pos. 3; Pos. 2 > Pos. 3

Significance level: $p_{\text{Scheffé}} = .05$.

all letters, initials and numbers on the envelope, and the name of the person to whom the letter is addressed.

No. of letters, initials and numbers on the envelope	No. of letters, initials and numbers on the envelope			
	1	2	3	4

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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The assumption of linearity held well. For example, the correlation between satisfaction with "opportunity to be someone important" and education was .12 ($p < .05$). The satisfaction means of the three educational levels showed slight curvilinearity, but the differences between the means of Ed. 1 and Ed. 2, and between Ed. 1 and Ed. 3, were not significant. The relationship between education and satisfaction with "opportunity to be someone important" was, therefore, approximately a linear one. Another example: The correlation between satisfaction with "organizational characteristics affecting the employee's feelings about his job" and education was not significantly different from zero. The corresponding three satisfaction means showed a curvilinear profile, but the means were not significant at $p < .05$ according to Scheffé post-hoc comparisons. Hence, there was no relationship. For position level (Table 47), the assumption of linearity held perfectly, as an inspection of the data will reveal.

Correlates of Job Performance

As they do with job satisfaction, most organizations have a goal of high job performance among their employees. Individual job performance is positively related to organizational effectiveness, surplus, and survival in a competing and turbulent environment. Job performance is positively associated with some demographic variables that more or less are related to the job itself. As mentioned in the theoretical discussion in Chapter III, Korman (1970) stated that performance should be a function of the extent to which the organization provides an ego-enhancing atmosphere, as opposed to one that is debilitating. In a broader sense, ego-enhancement may be related not only to

the organizational atmosphere but also to other ego-enhancing job or individual attributes, such as educational level and position level. Hypothesis 9 was tested by the correlation analysis shown in Table 48.

Table 48.--Pearson correlations between supervisory ratings of job performance facets and demographic variables.

	Position Level (n=317)	Education (n=325)	Number of Years in the Org. (n=324)	Age (n=324)	Number of Dependents (n=321)
Quant. perf.	.18*	-.02	.25*	.15**	.01
Qual. perf.	.21*	.15**	.01	.03	-.01
Overall perf.	.23*	.14**	.07	.07	-.06
Composite performance	.24*	.10***	.12***	.10***	-.02

*p < .001.

**p < .01.

***p < .05.

Table 48 shows that of the demographic variables, position level and education had the strongest relationship to job performance, just as they did to job satisfaction. Quantitative job performance also showed a significant relationship with number of years in the organization (.25, $p < .001$) and with age (.15, $p < .01$). It is probably true that employees with higher education and in higher positions derive satisfaction of higher-order needs directly from the job (intrinsic rewards). Satisfaction of intrinsic needs, such as challenge, self-esteem, achievement, influence, responsibility, and self-realization, contributes to ego-enhancement. Therefore, the positive correlation

between job performance and the ego-enhancing factors of education and position level seemed to be in accordance with Korman's predictions. Hypothesis 9 was retained.

In the present research it was found that among the demographic variables, education and position level were the strongest correlates of job satisfaction and job performance in Tanzanian organizations. Education and position level, therefore, were used as control variables in further investigating the relationship between job satisfaction and job performance. This is the topic of the next section.

Correlates of the Relationship Between Job Satisfaction and Performance

The Satisfaction/Performance Relationship Controlled for Demographic Variables

Hypothesis 10 stated that among the demographic correlates of job satisfaction and performance, there is a stronger relationship between job satisfaction and performance for higher amounts than for lower amounts of these correlates. Correlates or moderators of the satisfaction/performance relationship have been investigated by many authors (Abdel-Halim, 1980; Ewen, 1973; Greene, 1973; Inkson, 1978; Jacobs & Solomon, 1977; Korman, 1968; Lawler & Porter, 1967; Porter & Lawler, 1968; Slocum, 1971; Steers, 1975; Triandis, 1959). In this section, the relationship between job satisfaction, operationalized in accordance with the "is now" approach, and supervisory rating of job performance is further investigated. The data were split up on the demographic variables, educational level and position level of the individual respondents. As found in the previous section, these two

demographic variables were the ones that showed the strongest correlation with job satisfaction and job performance. Johnson and Stinson's (1975) procedure was followed as a test of significance among the correlations for the trichotomized control variables. The correlations are presented for all three aspects of job performance as well as for the latent trait or composite job performance, defined as the arithmetic mean of the three aspects of job performance. Only the composite satisfaction measure was used.

Table 49 shows that there was no relationship between job satisfaction and performance for the lowest level of education (elementary school and Form IV). For intermediate (Form VI or minimum of a one-year diploma course) and higher educational levels (Bachelor's degree, Master's degree, Ph.D), there was a positive and significant correlation between job satisfaction and performance ($r = .31$, $p < .01$ and $r = .22$, $p < .05$, respectively) for the composite measure of performance. There was a relatively high correlation between satisfaction and the qualitative aspect of job performance ($r = .37$, $p < .01$) for intermediate educational level. Two of the three performance aspects also showed higher correlations with satisfaction for intermediate educational level than for the highest level of education. Only for the quantitative performance aspect was this relationship stronger for the highest educational level than for the intermediate level.

The correlational structure of the satisfaction/performance relationship for various position levels was much the same as for education. For the lowest position level (workers, lower clerks), no relationship was found between job satisfaction and performance. The

Table 49.---Pearson correlations between job satisfaction and performance, controlled for educational level and position level separately.

JOB PERFORMANCE									
		P ₁ = Quant. Perf.		P ₂ = Qual. Perf.		P ₃ = Overall Perf.		P ₄ = Comp. Measure	
		Corr.	Difference (L - H)	Corr.	Difference (L - H)	Corr.	Difference (L - H)	Corr.	Difference (L - H)
<u>Educational Level</u>									
J O B	High	.27** (57)		.21*** (57)		.14		.22** (57)	
	Intermed.	.18*** (59)	p = .045	.37* (59)	p = .18	.27** (59)	p = .24	.31* (59)	p = .12
	Low	.01 (161)		.07 (161)		.03 (161)		.04 (161)	
<u>Position Level</u>									
S A T I S F A C T I O N	High	.04 (72)		.23** (72)		.15*** (72)		.15*** (72)	
	Intermed.	.14*** (128)	p = .57	.17** (128)	p = .13	.12*** (128)	p = .40	.16** (128)	p = .34
	Low	-.07 (70)		-.04 (70)		-.11 (70)		-.08 (70)	

*p < .01.

**p < .05.

***p < .10.

satisfaction/performance correlations were positive but rather low for higher position levels (top management, middle management) and intermediate levels (lower management, supervisors, secretaries, higher clerks). As Table 49 shows, some of these correlations were significant at $p < .05$, but others were significant only at $p < .10$.

The test of significance among the correlations for the three categories of a control variable is also shown in Table 49. With the level of significance set to 5%, only one of the eight sets of correlations was significant: the correlations between job satisfaction and quantitative job performance for the three levels of education ($p = .045$). However, if the differences between the lowest and intermediate educational levels had been tested, all four sets of correlations would have been significant at $p < .05$.

For position level as the controlling variable, the test of significance showed that there was no difference between the strength of the job satisfaction/performance relationship for the three position levels. However, the trend of the data indicated that the relationship was stronger, the higher the position level. Hypothesis 10 received only partial support.

When controlling for education and position level simultaneously, the relationship between job satisfaction and performance was that shown in Table 50. Only the three major level combinations for education and position are shown: high/high, intermediate/intermediate, and low/low.

Because education and position level were correlated in the investigated Tanzanian organizations, there is some built-in redundancy in the correlational data from Table 49 to Table 50. The data in

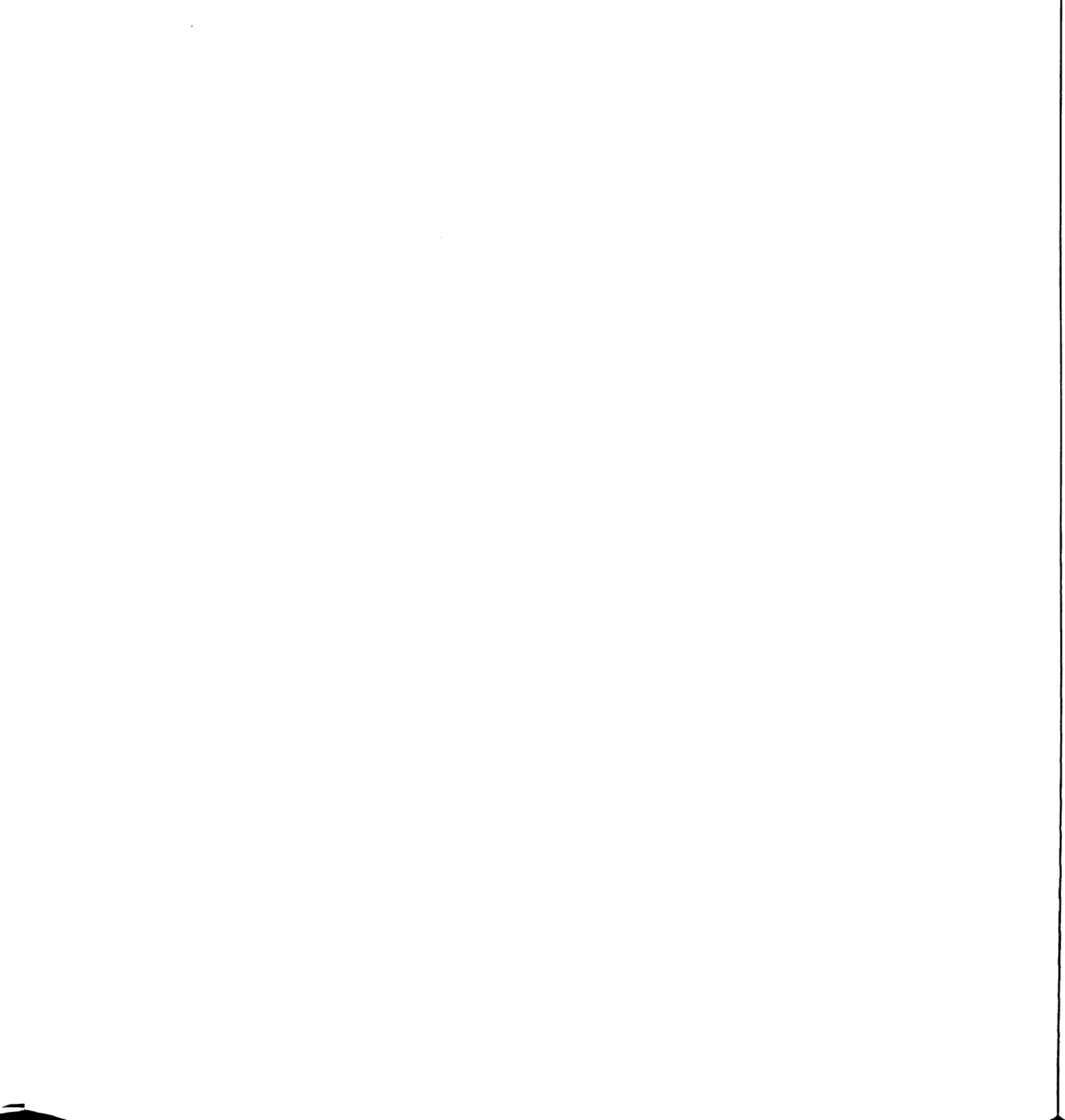
Table 50.--Pearson correlations between job satisfaction and performance, controlled for education and position level simultaneously.

Combinations of Education/Position Level	Quantitative Performance	Qualitative Performance	Overall Performance	Composite Performance Measure
High educ./high position	.22** (41)	.25** (41)	.14 (41)	.21** (41)
Intermediate educ./intermediate position	.18 (38)	.34* (38)	.27* (38)	.29* (38)
Low educ./low position	-.08 (67)	-.06 (67)	-.11 (67)	-.09 (67)

*p < .05.

**p < .10.

Table 50, therefore, tend to support the data in Table 49. There was no relationship between job satisfaction and performance for employees with the lowest level of education and the lowest position level. The correlations were even slightly negative. For the combination of intermediate levels of education/position and for the combination of higher levels of education/position, there was a positive but rather weak relationship between job satisfaction and performance. The correlation coefficients ranged from .14 to .25 for the combination high education/high position, and from .18 to .34 for the intermediate level of both education and position. Three of the eight correlation coefficients were significant at $p < .05$ ($n = 38$), and three others were significant at $p < .10$ ($n = 41$). When testing for significance of the correlation coefficients across the three level combinations, it was found that



none of the four differences (Low/Low - High/High) was significant at $p < .10$. However, for the qualitative performance aspect, the difference between $r = .34$ and $r = -.06$ was significant at $p = .08$.

In conclusion, educational level, position level, and the combination of these to control variables provided different strengths, but only partially significant differences of the job satisfaction/performance relationship. For the lowest educational and position levels and their combination, there was no relationship between job satisfaction and performance in the investigated Tanzanian organizations. For intermediate and higher levels, and for the major level combinations (intermediate/intermediate on education and position, and higher/higher on education and position), there was a positive although rather weak relationship between satisfaction and performance. This relationship did not become stronger (but rather became weaker) from intermediate to higher levels of the two demographic variables and their major level combinations. The fact that the strength of the satisfaction/performance relationship did not increase monotonously with increasing levels and/or level combinations of education and position seems not to be explainable from the present data.

The overall result of this analysis was in line with the research of Forbes and Barrett (1978) discussed in the section on correlations based on the two subsamples. Education and position level were related to individual abilities and task demands. Forbes and Barrett found that abilities and task demands were positively related to the satisfaction/performance relationship.

Assuming that Tanzanian organizations want to optimize both job satisfaction and performance for all categories of personnel, the data may indicate that employees at the lowest organizational and/or educational levels should be given real opportunities to develop and advance in their jobs. A reward system that is clearly contingent on performance, and in particular a promotion system that is related to both job performance and education/self-development, would probably contribute to a more positive relationship between job satisfaction and performance in accordance with the Porter and Lawler model for interpreting the satisfaction/performance relationship.

The Satisfaction/Performance
Relationship Controlled for Job
Characteristics and Organizational
Climate

As stated before, a weak but positive relationship was found between job satisfaction and performance. The correlation between supervisory ratings of performance and job satisfaction operationalized in accordance with the "is now" approach was found to be $r = .14$ ($p < .01$). The strength of the relationship increased slightly with educational level and even a little with increasing position level. The relationship also became slightly stronger with increasing levels of both education and position. The next question was whether the strength of this relationship varied with varying levels of the two major variables, job characteristics and organizational climate. Table 38 showed that both job characteristics and organizational climate were strongly related to job satisfaction ($r = .74$, $p < .001$ and $r = .45$, $p < .001$, respectively). However, job characteristics

and organizational climate were not related significantly to supervisory rating of job performance.

Abdel-Halim (1980) found that the strength of the satisfaction/performance relationship increased with increasing higher-order need strengths of employees. Because these higher-order needs tend to be better satisfied the higher the job content/context is, the amount of job characteristics may create a variation in the satisfaction/performance relationship. This is not, of course, to argue any causal relations. The same reasoning may be attributed to organizational climate and the satisfaction/performance relationship. In accordance with the Porter and Lawler (1968) model for interpretation of the satisfaction/performance relationship, it was hypothesized that the higher the amount of job characteristics and organizational climate (more positive), the stronger the relationship between job satisfaction and performance (Hypothesis 11). Table 51 shows this relationship, controlled separately for job content and climate.

None of the correlations in Table 51 was significant at $p < .05$ or $p < .10$. They were all low, just as the zero-order correlation between job satisfaction and supervisory ratings of performance was ($r = .14$). Neither was the difference ($L - H$) between the correlations across the trichotomized control variables significant, following the procedure of Johnson and Stinson (1975). There was no trend in the data either. Job characteristics (job content) and organizational climate were not correlates of the relationship between job satisfaction and job performance across the investigated Tanzanian organizations. Hypothesis 11 on these correlates was not retained.

Table 51.--Pearson correlations between job satisfaction and performance, controlled for job characteristics and organizational climate separately.

	P ₁ = Quantitative Performance	P ₂ = Qualitative Performance	P ₃ = Overall Performance	P ₄ = Composite Performance Measure
<u>Amount of job characteristics</u>				
High (n=71)	-.10	.11	.11	.04
Intermediate (n=142)	.04	.08	.11	.08
Low (n=43)	.02	.14	.15	.11
<u>Amount of organizational climate</u>				
High (n=12)	-.04	-.03	.02	-.02
Intermediate (n=137)	.12	.22	.11	.16
Low (n=74)	.02	.04	.07	.05

Table 52 shows this relationship when controlling for the same two variables simultaneously. The correlations were not statistically significant, except for one single correlation--that for intermediate levels of both job content and organizational climate for the overall aspect of job performance ($r = .21$, $n = 70$, $p < .05$). The correlations were all low, just as the zero-order correlation between satisfaction and performance was. In a few cases where the cell sizes were extremely

Table 25 shows the information which was used for the data on variable simultaneous. The results are shown in Table 25. Significant, except for the single two-way interaction for the level of both job content and motivational climate. The overall effect of job performance is $F = 3.5, p < .05$. The interaction was off, but in the opposite direction. In a few cases where the cell means were extremely

Table 25

High
(n=11)

Intermediate
(n=12)

Low
(n=11)

High
(n=11)
Intermediate
(n=12)

High
(n=11)

Intermediate
(n=12)

Low
(n=11)

Table 52.--Pearson correlations between job satisfaction and performance, controlled for job characteristics and organizational climate simultaneously.

Org. Clim. Job Charact.	Quantitative Performance			Qualitative Performance			Overall Performance			Composite Perf. Measure		
	High	Inter.	Low	High	Inter.	Low	High	Inter.	Low	High	Inter.	Low
High	.39 (11)	-.05 (43)	-.13 (6)	.21 (11)	.19 (43)	-.02 (6)	.33 (11)	.02 (43)	.56 (6)	.34 (11)	.05 (43)	.09 (6)
Intermediate		.09 (70)	.16 (44)		.14 (70)	.17 (44)		.21* (70)	.13 (44)		.15 (70)	.16 (44)
Low		-.09 (14)	-.09 (17)		.15 (14)	-.15 (17)		-.08 (14)	.07 (17)		-.01 (14)	-.06 (17)

*p < .05.

small, the correlations were higher but probably not very reliable. In some of the cells, the correlations were not calculated because of too few respondents (empty cells).

When testing the difference ($L - H$) between correlations across the trichotomized control variables one at a time, none of the differences was significant at $p < .05$. The difference between $r = .07$ and $r = .56$ was not even significant at $p < .10$ because of the low cell size. In conclusion, the combined trichotomized amounts of job characteristics and of organizational climate were not correlates of the relationship between job satisfaction and job performance.

It is hard to interpret these results further. There is evidence that a soundly established and well-communicated reward system affects the performance/satisfaction relationship, at least in industrialized countries. This seems to be the case because the more contingent rewards are upon performance, the stronger this relationship seems to be (Lawler & Porter, 1967). Included in the organizational climate index were different kinds of extrinsic rewards; intrinsic rewards were included partially in the job characteristics index and partially in the organizational climate index. Still, these variables were found not to be correlates of the satisfaction/performance relationship across the investigated Tanzanian organizations.

Job Satisfaction as a Function of Two Demographic Variables and Two Major Variables: Interaction Effects

In this section, job satisfaction is further investigated as a function of education and position level by means of two-way ANOVA. Job satisfaction is also investigated further as a function of job

characteristics and organizational climate. Using the ANOVA statistical method on the present research data cannot, of course, argue any causal relationships. The question of cause and effect lies in the design of the study, not in the methods of analysis applied. The data were collected at one time only, and the independent variables were not manipulated as in experimental and quasi-experimental designs. When statements are made about "main effects of independent variables" on the "dependent variable" of job satisfaction, it means that the relationship was investigated, without arguing true cause-effect. However, other investigations, or hunches from literature or organizational practices, allow one to assume that variables such as position level or job characteristics may have a causal contribution to the level of job satisfaction among employees. But this is an assumption, not a conclusion derived from the ANOVA analysis. Later in this chapter, however, path analysis makes it possible to state something about the strongest causal direction in the total pattern of major variables.

The computer program for two-way ANOVA is designed so that each source of variation is confounded with the effects of all other sources of variation below it in the ANOVA table. The interaction effect of two independent variables is always listed last; hence it is easily detected as a pure interaction effect directly from the ANOVA table. A significant interaction effect can be understood from graphs of cell means of job satisfaction as a function of one independent variable controlled for the other, and vice versa.

For nonsignificant interaction effect, potential main effect of the last listed independent variable in the ANOVA table can be

detected directly as a pure main effect from the table. But if this effect is significant, the potential main effect of the first-listed variable (of two independent variables) cannot be detected directly from this ANOVA table. A new computer program must be run, in which the two independent variables change places in the ANOVA table. This makes it possible to separate the pure main effects of the independent variables.

Regression analysis could have been used instead of two-way ANOVA. Because the independent variables are categorized (trichotomized), information is lost when using ANOVA, compared to regression analysis. However, the difference is not large, and the same major conclusions are probably reached.

Job Satisfaction as a Function of
Education and Position Level:
Interaction Effect

Earlier in this chapter, it was found that education and position level were correlates of job satisfaction. The major purpose of the analysis of variance in this section was to investigate the interaction effect of education/position level on job satisfaction. The zero-order correlations between position level and satisfaction cannot tell whether this correlate of job satisfaction is confounded with an education effect, nor can they tell whether education as a correlate of job satisfaction is confounded with a position effect. The two-way ANOVA can separate the two main effects into a relatively pure education effect and a relatively pure position effect. Table 53 shows the results of both the interaction effects and the main effects. This

Table 53.--Two-way ANOVA for job satisfaction as dependent variable and education and position level as independent variables.

	Variance Source	Sum of Squares	Mean Squares	df	F	Signif. of F	Comments on Effects
Opportunity to be someone important	Ed. Pos. Ed. x Pos.	11.557	2.889	4, 269	3.042	.02	From graph of cell means From graph of cell means s.
Private attitudes that make the employee like his job	Ed. Pos. Ed. x Pos.	1.830 5.129 4.721	.915 2.565 1.180	2, 269 2, 269 4, 269	1.219 3.418 1.573	.30 .03 .18	n.s. From "JOBSAT2 BY Pos, Ed" s. n.s.
Organizational characteristics affecting the employee's feelings about his job	Ed. Pos. Ed. x Pos.	5.364 2.706 3.489	2.682 1.353 .872	2, 269 2, 269 4, 269	2.537 1.280 .825	.08 .28 .51	n.s. n.s. n.s.
Feelings toward immediate superior	Ed. Pos. Ed. x Pos.	3.861 2.417 10.727	1.930 1.208 2.682	2, 269 2, 269 4, 269	1.219 .763 1.694	.30 .47 .15	n.s. n.s. n.s.
Physical and social conditions	Ed. Pos. Ed. x Pos.	16.923 1.848 3.303	8.462 .924 .826	2, 269 2, 269 4, 269	6.058 .661 .591	.003 .52 .67	s. n.s. n.s.
Composite measure of job satisfaction	Ed. Pos. Ed. x Pos.	5.909 2.949 4.920	2.955 1.475 1.230	2, 269 2, 269 4, 269	4.622 2.307 1.924	.01 .10 .11	s. n.s. n.s.

two-way ANOVA tested Hypothesis 12: There is an interaction effect as well as a main effect of education and position level on job satisfaction.

Table 53 shows that the interaction effect of education/position level on job satisfaction was significant for only one satisfaction aspect. This aspect was satisfaction with "opportunity to be someone important" (e.g., satisfaction with pay, recognition and promotion, satisfaction with the degree of challenge in the work, satisfaction with the use of one's abilities at work, and satisfaction with authority and responsibility attached to the position).

Among the other satisfaction aspects there was only one significant position effect. Position level had an effect on "private attitudes that make the employee like his job" (e.g., satisfaction with types and varieties of tasks and activities, satisfaction with the degree of freedom at work, and satisfaction with accomplishments). The higher position an employee held, the more satisfied he/she was with this job aspect. This probably has an easy and rather evident interpretation: Those who hold higher positions usually have more challenging and enriched jobs in which higher-order needs are more easily met than in repetitive and monotonous jobs with little freedom in planning and executing work.

Education had a significant effect on satisfaction with two of the five job aspects and on composite job satisfaction. The level of education had a main effect on satisfaction with "private attitudes that make the employee like his job," just as position level had. The higher one's education, the more satisfaction of higher-order needs

he/she is likely to experience. Education also had a significant effect on satisfaction with "feelings toward immediate superior" (e.g., on satisfaction with technical and human qualifications of one's superior). This result is hard to interpret. A possible explanation is that employees with lower education also have immediate superiors with lower education, and hence lower technical and human qualifications with which they tend to be dissatisfied, compared to better-educated employees with better-trained superiors. Finally, education had a main effect on job satisfaction as a composite measure. Other researchers have indicated that with increasing education, employees tend to require more inducements in order to experience satisfaction (Hornick et al., 1977; James & Jones, 1980; Seybolt, 1976; Steers, 1977; Weaver, 1978). Even though this may be a real countereffect to the positive educational effect on satisfaction among Tanzanians, the overall effect of education still was positive.

Table 54 shows the cell means, and Figures 3 and 4 are the graphs from which potential main effects can be detected.

Figure 3 shows that the interaction effect of education/position was disordinal and that there seemed to be no main effect of position on satisfaction with "opportunity to be someone important."

Figure 4 shows that the interaction effect was again disordinal, and that there seemed to be no main effect of education on satisfaction with "opportunity to be someone important."

In conclusion, of the six potential interaction effects, there was only one interaction effect between education and position. There was a clear main effect of education on job satisfaction: Job

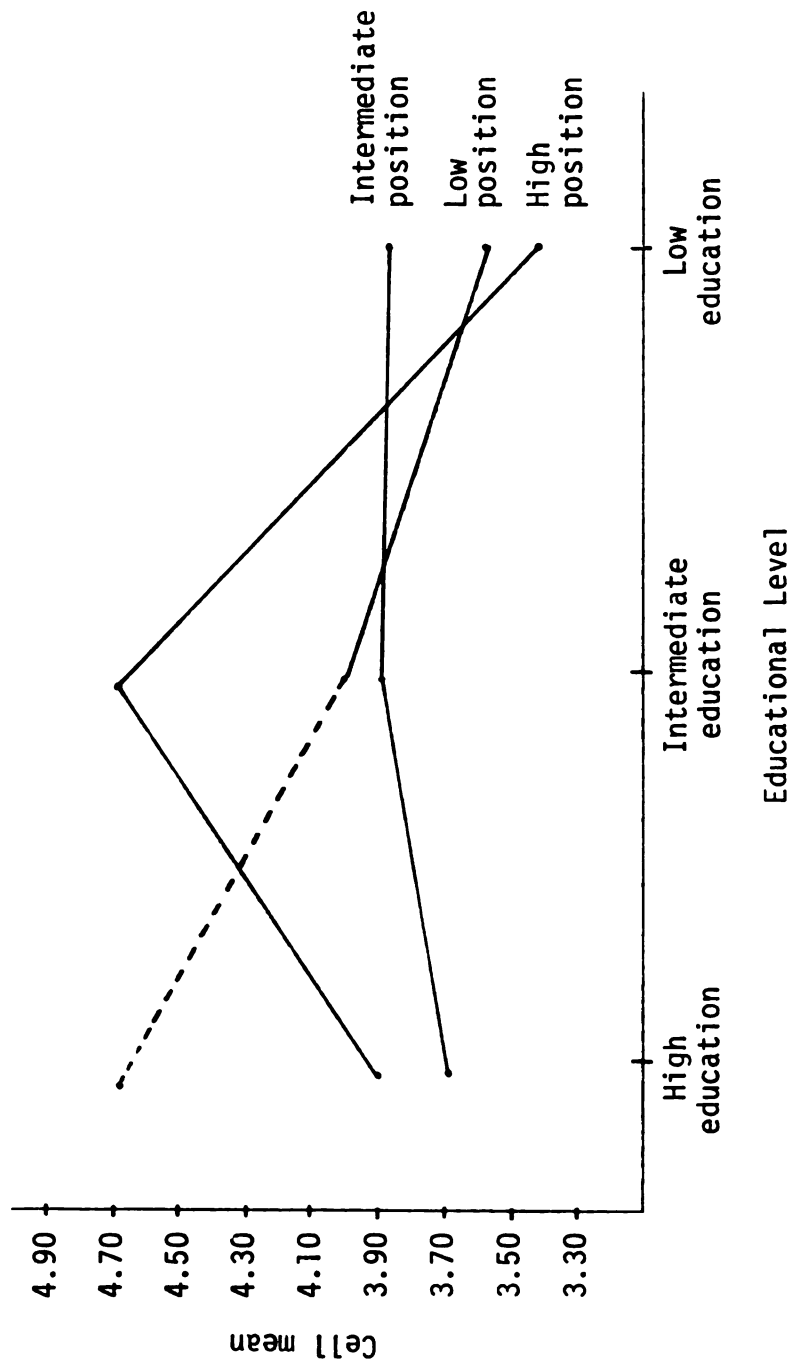


Figure 3.--Satisfaction with "opportunity to be someone important" as a function of education, controlled for position level. Effect of position level.

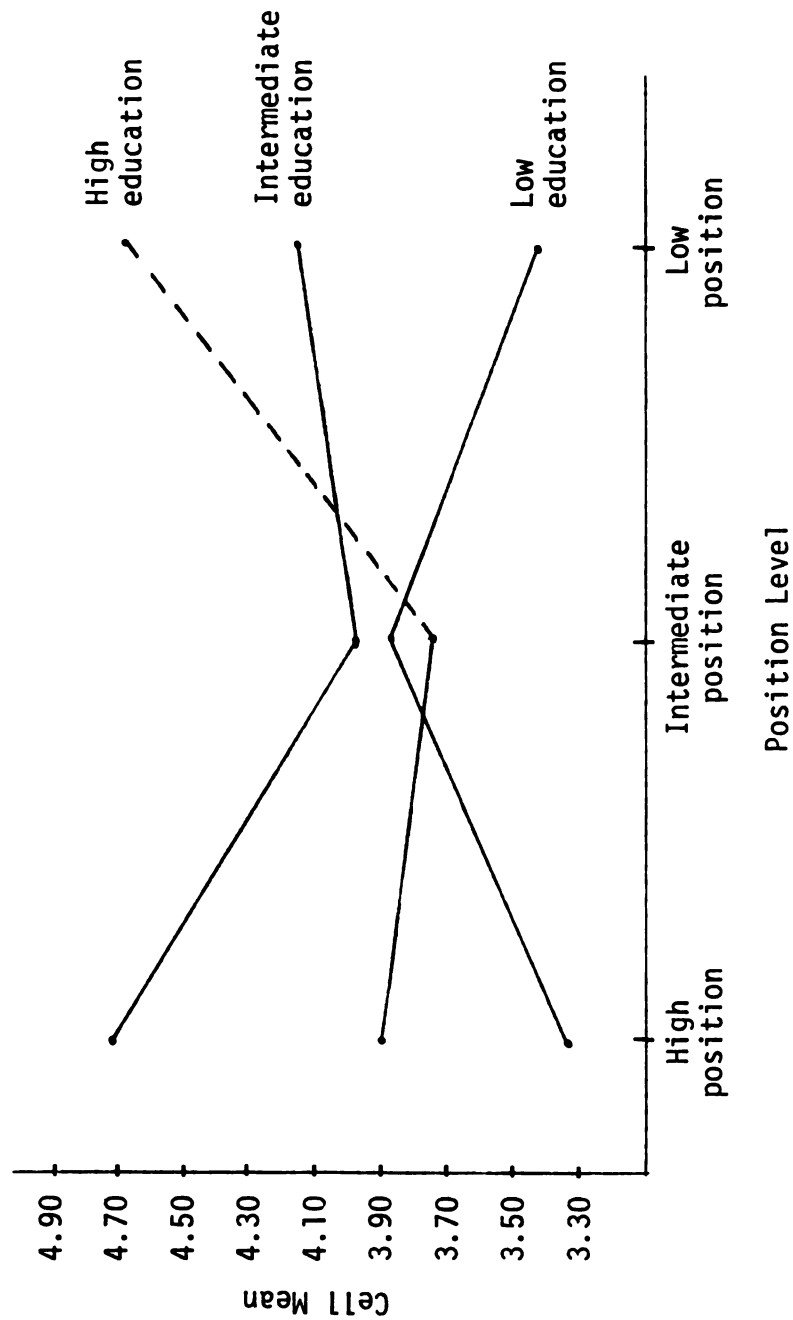


Figure 4.--Satisfaction with "opportunity to be someone important" as a function of position level, controlled for education. Effect of educational level.

satisfaction increased with increasing educational level. There was no main effect of position level on job satisfaction with one exception: that on satisfaction with "private attitudes that make the employee like his job." In the section that dealt with demographic variables of job satisfaction, a positive and significant relationship was found between position level and job satisfaction. Because the two-way ANOVA showed no main effect of position level, one can conclude that position was confounded with education in the correlation analysis in that section. Hypothesis 12 received only partial support.

Table 54.--Cell means and frequencies for satisfaction with "opportunity to be someone important" in a 3 x 3 cross-tabulation of education and position level.

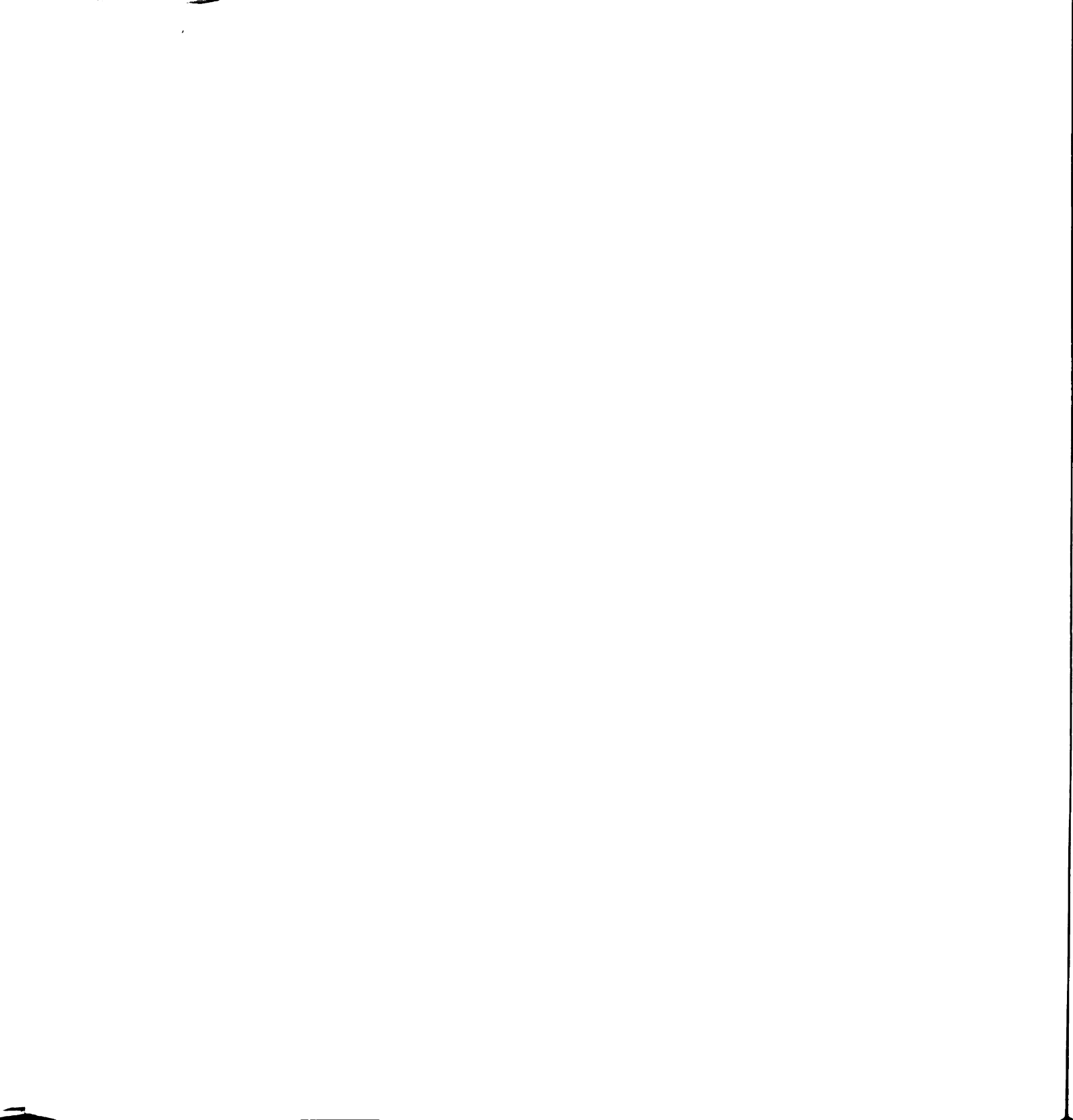
	Pos. 1 = High Position Level	Pos. 2 = Inter- mediate Posi- tion Level	Pos. 3 = Low Position Level
Educ. 1 = High education	3.87 (43)	3.69 (14)	4.67 (1)
Educ. 2 = Inter- mediate education	4.67 (18)	3.89 (38)	4.00 (4)
Educ. 3 = Low education	3.33 (14)	3.86 (79)	3.52 (67)

In this section, statements such as "main effect of position on job satisfaction" imply that position level is regarded as an independent variable and job satisfaction as a dependent variable. This analysis cannot argue true causal relations; it can only investigate relationships between variables. It is possible that job satisfaction

may have an effect on positions earned, quite as well as position level may have an effect on the level of perceived satisfaction with job aspects. One may argue, for example, that because employees are highly satisfied with "private attitudes that make the employee like his job," they develop attributes that are highly valued in competing for higher positions. It is, however, less reasonable that an increase in job satisfaction will result in increased education. It is more likely that education is a cause of the level of experienced satisfaction at work. James and Jones (1980) found in a nonrecursive, structural equation analysis that the causal direction was from education to job satisfaction. They discovered, however, that the relationship between education and satisfaction was negative.

Job Satisfaction as a Function of
Job Characteristics and Organizational
Climate: Interaction Effect

The correlation analysis showed that job characteristics and organizational climate were rather strongly correlated with job satisfaction ($r = .74$ and $r = .45$, respectively). It is not known, however, the extent to which correlation of satisfaction with job characteristics was confounded with organizational climate and vice versa. What is known is that job characteristics were positively related to organizational climate ($r = .36$). Two-way ANOVA was used to investigate the extent to which there was an interaction effect on job satisfaction, and the extent to which there was a main effect of job characteristics and organizational climate on the level of experienced satisfaction with various job aspects (Hypothesis 13). It was assumed that job



characteristics and organizational climate were independent variables and satisfaction a dependent variable. Table 55 shows the results. There was no significant interaction effect (at $p < .05$) of job characteristics/organizational climate on job satisfaction. However, considering the significance of the F-value, it is worth noting that one F-value was significant at $p = .06$, another at $p = .08$, and a third at $p = .10$.

Furthermore, organizational climate had a main effect on satisfaction with "opportunity to be someone important" ($p = .001$), on satisfaction with "organizational characteristics affecting the employee's feelings about his job" ($p = .000$), on satisfaction with "feelings toward immediate superior" ($p = .000$), and on job satisfaction as a composite measure ($p = .000$).

Finally, job characteristics had a significant ($p = .000$) main effect on all the five satisfaction facets, as well as on job satisfaction as a composite measure.

In conclusion, there was no interaction effect of job characteristics/organizational climate on job satisfaction. There was a strong main effect of job characteristics on job satisfaction, and a rather strong main effect of organizational climate on four of the six satisfaction measures, including the composite satisfaction measure. Hypothesis 13 received only partial support. These data did not prove any causal relationship. There might be a reciprocal causal relationship between job characteristics and satisfaction, and between organizational climate and job satisfaction.

Table 55.--Two-way ANOVA for job satisfaction as dependent variable and job characteristics and organizational climate as independent variables.

	Variance Source	Sum of Squares	Mean Squares	df	F	Signif. of F	Comments on Effects
Opportunity to be someone important	JCH	41.963	20.982	2, 204	38.151	.000	s. From "JOBSAT1 BY OCL, JCH (1,3)"
	OCL	8.363	4.181	2, 204	7.603	.001	s.
	JCH x OCL	4.142	1.381	3, 204	2.511	.06	n.s.
Private attitudes that make the employee like his job	JCH	50.272	25.136	2, 204	50.345	.000	s.
	OCL	.779	.389	2, 204	.780	.46	n.s.
	JCH x OCL	2.203	.734	3, 204	1.471	.22	n.s.
Organizational characteristics affecting the employee's feelings about his job	JCH	21.384	10.692	2, 204	18.090	.000	s. From "JOBSAT3 BY OCL, JCH (1,3)"
	OCL	31.079	15.540	2, 204	26.292	.000	s.
	JCH x OCL	3.738	1.246	3, 204	2.108	.10	n.s.
Feelings toward immediate superior	JCH	50.094	25.047	2, 204	26.596	.000	s. From "JOBSAT4 BY OCL, JCH (1,3)"
	OCL	20.660	10.328	2, 204	10.967	.000	s.
	JCH x OCL	4.453	1.484	3, 204	1.576	.20	n.s.
Physical and social conditions	JCH	40.309	20.154	2, 204	16.777	.000	s.
	OCL	1.455	.727	2, 204	.606	.55	n.s.
	JCH x OCL	3.453	1.151	3, 204	.958	.41	n.s.
Composite measure of job satisfaction	JCH	35.538	17.769	3, 204	55.110	.000	s. From "JOBSAT BY OCL, JCH (1,3)"
	OCL	6.398	3.199	2, 204	9.921	.000	s.
	JCH x OCL	2.212	.737	3, 204	2.287	.08	n.s.

As discussed in Chapter II, job characteristics and partially also organizational climate have been treated as independent variables in the research literature. Research during recent years has shown with increasing confidence that even job perceptions (job characteristics) seem to exist in a reciprocal causal relation with job satisfaction and/or job performance (James & Jones, 1980; O'Reilly & Caldwell, 1979; Staw, 1975). The nonrecursive, structural equation analysis of James and Jones seems particularly convincing. These authors found that the magnitude of the estimated job satisfaction \rightarrow job characteristics causal association was .60, whereas the estimated job characteristics \rightarrow job satisfaction causal association was .24. The relationship was reciprocal, but according to this recent research, it did not appear to be symmetrical. In the section on testing causal directions in the pattern of variables, the strength of some causal associations is investigated by path analysis, but the model underlying James and Jones' research is not tested. In the path model of this Tanzanian research, the causal direction between these two variables was assumed to be from job characteristics to job satisfaction.

The results of these analyses of variance also showed that the additivity assumption underlying path analysis of the four-variable pattern was met as regards the interaction effect on job satisfaction. The point is that if job characteristics and organizational climate interact in affecting satisfaction, the causal inference based on path analysis may be incorrect. Table 55 showed that no interaction effects existed.

This Tanzanian research has shown that job characteristics and organizational climate were positively correlated with job satisfaction, and that the two independent variables both had an effect on job satisfaction. The effect of job characteristics on satisfaction was particularly strong, as was the correlation between these two variables. Furthermore, it was found that the level of job satisfaction was higher in higher education institutions than in production firms. It was argued earlier that job characteristics are probably more positive in the former types of organizations. Even the organizational climate in higher education organizations may be more conducive to individual learning and personal growth. It is probably true in most organizations that development of job content and organizational climate is a prerequisite for effective learning on the job. Job enrichment is an approach for redesigning jobs to increase motivation and job satisfaction. Enriched jobs tend to fulfill individual growth needs, such as achievement, competence, and self-actualization. If employees are given more self-control and self-direction, more responsibility, and an opportunity to perform interesting, challenging, and meaningful tasks, the job becomes more enriched. Then it is predicted that the quality of performance will improve, absenteeism and turnover will decrease, and the learning environment will be more effective in terms of lifelong education and growth. These predictions have been supported in many studies conducted to evaluate the effect of job-enrichment programs (Ford, 1969, 1973; Lawler, 1969; Mahler, 1971; Paul, Robertson, & Herzberg, 1969).

In the next section, it is shown that job characteristics also have a positive effect on job performance. One may argue that not all jobs can possess high job content, that is, be highly enriched. This is certainly true, but most jobs can be redesigned and enriched to a certain degree so that employees avoid serious boredom, alienation, or physical and mental deterioration. There is always an opportunity to learn, grow, and advance on the job if career programs are designed and if the organization understands how to develop the job content through job design and job enrichment. An analysis of the research area of job enrichment is beyond the scope of this study, however.

As regards job context, particularly group climates and organizational climate, several potential opportunities for increasing job satisfaction and for building and maintaining effective learning environments exist. This is important not only to higher education institutions, but also to other types of organizations. Self-knowledge; feedback on one's own work behavior; an atmosphere of trust and non-defensiveness; an opportunity to try out new patterns of thought and practice, to practice new work methods and approaches, and to apply new learning; and relearning how to learn are potential areas related to the climate facets that may increase satisfaction and effective learning and development on the job (NTL, Summer Reading Book, 1967).

The value of building a good organizational climate for continued learning on the job has been demonstrated in the research literature of continuing education as well as of organizational behavior. Designing an organizational structure that is not too constraining but that is conducive to learning on the job is probably the most important

factor in organizational learning psychology. Employees need to develop responsibility and autonomy, but also interdependence, at work in order to receive the necessary feedback for further learning, development, and performance. A just and equitable reward system is a crucial motivational factor in continuing learning and performing. The reward system is also an important link between performance and satisfaction, as elaborated in Chapter II. Work standards that are jointly agreed upon between employees and superior represent higher individual and group challenges than do work standards that are set solely by the superior.

The human and technical qualities of supervisors and managers at various organizational levels and their influence on learning, performance, and satisfaction have been of great concern to researchers. Managers who adopt a helping and supporting role and a democratic-participative leadership style represent in most organizations in most countries a management climate conducive to individual growth and development. However, the most effective leadership style depends on the particular situations and conditions that exist at work as well as on the individual characteristics of employees. The communication climate is another factor that influences greatly how much employees are able to develop and perform for individual benefit and for the benefit of the organization. Under all circumstances, it is essential for job satisfaction that the climate is such that employees can develop openness and mutual trust and respect. Then self-learning and development seem to thrive. The decision-making climate is intertwined with the prevailing leadership style in an organization. In most cases, the

best basis for employee learning and performance is an effective participative decision-making system, but situational factors are crucial in finding the most effective leadership style and decision-making approach (Fiedler, 1967).

Another factor is the conflict-resolution climate. In many organizations, better learning on the job is provided if conflicts are openly worked through than if they are suppressed or denied. Development of a necessary identification (that is, belongingness and loyalty) with the organization seems to promote learning, performance, and satisfaction at work. However, too much loyalty and identification with the organization may inhibit change and further development, organizationally and individually. Interpersonal morals as a climate aspect have not been researched. Nevertheless, it is assumed that interpersonal acceptance, tolerance, honesty, favoritism, manipulation, and conspiracy are variables that affect the possibility of continuing learning and development in the work environment.

These climate aspects are those that were measured in the present study. Most of them were consistent with the assumptions underlying organizations as learning communities, described by Knowles (1979). Future organization educationists will probably be called upon at an accelerated rate to design, redesign, and develop organizations so that they become real learning environments from which both employees and the organization can benefit. In this future work, there is a great need to develop an interdisciplinary organizational pedagogy.

As regards educational institutions, an organizational pedagogy was inherent in the socio-didactic organization model worked out

by Herbst (1971). Socio-didactic analysis is the study of the relationship between the structure of educational tasks and the characteristics of educational organizations. It can be regarded as an extension of socio-technical theory.

Herbst described the relationship between the structure of educational tasks and the characteristic traits of educational organizations in the following way:

1. The way the subject is structured in terms of learning tasks, and the criteria that are established to evaluate task performance, determine the possible relations between teachers and students as well as the task-dependent relations among students.
2. The possible relations among subjects depend on the structuring of tasks within each subject.
3. Possible relations among teachers depend on the relations among various subjects.
4. Authority structure and control within the total educational system are determined by the task-dependent relations between students and teachers and among teachers themselves.

The description of this major link between the organization and educational tasks seems to bring to the surface three essential relationships between elements in a socio-didactic system: the relationship between task structure and teacher/student relations, the relationship between task structure and subject/subject relations, and the relationship between subject/subject relations and teacher/teacher relations. The existing organizational climate and job characteristics, or educational efforts to develop climate aspects and job characteristics,

are important determinants of the kinds of relationships that will develop in a socio-didactic system.

Job Performance as a Function of Job Characteristics
and Organizational Climate: Interaction Effect

In this section, the interaction effect of job characteristics and organizational climate as well as their main effects on job performance is investigated. Hypothesis 14 stated that there are both main effects and interaction effects on performance. The effects were investigated both on self-ratings and supervisory ratings of job performance to see if there was any effect difference as regards these two ways of rating job performance. Self-ratings of performance are considered not to be as accurate a measure as supervisory ratings. On the other hand, job characteristics and organizational climate are also employee-perceived measures, just as are self-ratings of performance. According to the attribution theory described in Chapter II, the way employees perceive their job performance (and satisfaction) may influence their perceptions on job characteristics and organizational climate, as well as the other way around. It was, therefore, of interest to test if there was any difference in main effects and interaction effects of the two independent variables on job performance, rated by employees themselves (self-ratings) and by superiors. The hunch was that effects of the employee-perceived independent variables on employee-rated (self-rated) performance might be larger than effects of the employee-perceived independent variables on supervisory ratings of employees' performance.

The zero-order correlation analysis showed that the only significant relationship was that between self-ratings of performance and job characteristics (.16, $p < .001$). It was, therefore, the main effect of job characteristics and the potential interaction effect of job characteristics/organizational climate that were of particular interest to investigate by means of a two-way ANOVA.

Table 56 shows that there was neither a significant interaction effect nor a main effect of organizational climate on job performance, regardless of who rated the level of job performance. It was expected that no main effect would occur when there was no significant correlation between the two considered variables, organizational climate and performance.

Interchanging the locations of job characteristics and climate in the ANOVA table showed that the main effect of job characteristics on performance was significant for self-ratings but not for supervisory ratings of performance. For self-ratings, the level of F-significance varied from $p = .005$ for the composite performance measure to $p = .096$ for quantitative performance.

Hypothesis 14 received only partial support. The stated hunch, grounded on self-attribution theory, received support: Employee perceptions of job characteristics seemed to have a larger effect on employee-perceived (self-rated) level of job performance than on supervisory-perceived performance of subordinates. However, according to self-attribution theory, there is also the possibility that self-perceptions of performance have an effect on the perceptions of job characteristics. Causal relations, particularly the potential reciprocal

Table 56.--Two-way ANOVA for job performance as dependent variable and job characteristics and organizational climate as independent variables.

	Source of Variance	Sum of Squares	Mean Squares	df	F	Sign. of F	Conclusions on Effects ^a
A1=Self-ratings of quantitative performance	JCH OCL JCH x OCL	8.493 .239 2.950	4.247 .120 .987	2, 213 2, 213 3, 213	2.370 .067 .551	.096 .94 .65	n.s. From "A1 BY OCL, JCH(1,3)" n.s. n.s.
A2=Self-ratings of qualitative performance	JCH OCL JCH x OCL	7.823 6.544 7.788	3.911 3.272 2.596	2, 213 2, 213 3, 213	3.067 2.566 2.035	.049 .08 .11	s. From "A2 BY OCL, JCH(1,3)" n.s. n.s.
A3=Self-ratings of overall performance	JCH OCL JCH x OCL	14.633 3.613 8.766	7.317 1.807 2.922	2, 213 2, 213 3, 213	4.757 1.175 1.900	.010 .31 .13	s. From "A3 BY OCL, JCH(1,3)" n.s. n.s.
A4=Self-ratings, composite measure	JCH OCL JCH x OCL	9.445 1.835 2.742	4.722 .917 .914	2, 213 2, 213 3, 213	5.370 1.043 1.039	.005 .35 .38	s. From "A4 BY OCL, JCH(1,3)" n.s. n.s.
B1=Superv. rat. of quantitative performance	JCH OCL JCH x OCL	1.707 1.624 1.119	.854 .812 .373	2, 213 2, 213 3, 213	.702 .667 .306	.50 .51 .82	n.s. n.s. n.s.
B2=Superv. rat. of qualitative performance	JCH OCL JCH x OCL	1.110 .088 2.453	.555 .044 .818	2, 213 2, 213 3, 213	.526 .042 .775	.59 .96 .51	n.s. n.s. n.s.
B3=Superv. rat. of overall performance	JCH OCL JCH x OCL	.589 2.531 1.439	.294 1.266 .480	2, 213 2, 213 3, 213	.306 1.315 .499	.74 .27 .68	n.s. n.s. n.s.
B4=Superv. rat., composite measure	JCH OCL JCH x OCL	.434 .783 1.307	.217 .391 .436	2, 213 2, 213 3, 213	.261 .470 .524	.77 .63 .67	n.s. n.s. n.s.

^aSignificance level: p = .05.

relationship between job characteristics and performance, require special research. It is recommended that such research be conducted for both self-ratings and supervisory ratings of performance in order to detect any effect difference that can be explained by self-attribution theory.

Table 56 also shows that the additivity assumption underlying path analysis of the four-variable pattern was met as regards potential interaction effects on job performance. This assumption was met because there were no interaction effects of job characteristics and organizational climate on performance.

Causal Directions in the Pattern of Variables:
A Path-Analytic Approach

In this section an analysis is carried out on the linear structural relationships among the variables job characteristics, organizational climate, job satisfaction, and job performance. This analysis is a path analytic approach to a structural analysis of covariance matrices, as described in Chapter III. The test of significance was the method of maximum likelihood. The analysis was done with aggregated data, that is, composite measures of the four latent traits. Only the structural model was used, not the measurement model. In the two preceding sections, the additivity assumption underlying path analysis was discussed. This assumption was that there were no significant interaction effects between job characteristics and organizational climate on job satisfaction and performance. The additivity assumption was found to be met. The goal of this analysis was to find the strongest causal direction in the pattern of variables. Hypothesis 15 stated

that the causal direction is stronger from job satisfaction to performance than from job performance to satisfaction.

Testing of Causal Directions
in the Pattern of Variables
for Aggregated Data

The two models of causal direction, illustrated and described in the Path Analysis section of Chapter III, were analyzed. The computer program LISREL needs as input a model specification and the correlation matrix to be analyzed. When using the structural model only, the model specifications are the following:

β To From	ϑ_1	ϑ_2
ϑ_1	0	β_1
ϑ_2	0	0

Φ	ξ_1	ξ_2
ξ_1	0	
ξ_2	Ξ	0

Ψ	ρ_1	ρ_2
ρ_1	ρ_1	
ρ_2	0	ρ_2

Γ To From	ϑ_1	ϑ_2
ξ_1	γ_3	γ_4
ξ_2	γ_5	γ_6

The matrix of β defines the causal relationship between the endogenous variables of job satisfaction and job performance. In the model, β is specified as full and fixed.

The matrix of Φ defines the correlation between the exogenous variables of job characteristics and organizational climate. In the model, Φ is specified as symmetric and fixed.

The matrix of Ψ is a covariance matrix that defines the errors of specification for each of the equations. In the model, Ψ is specified as diagonal.

The matrix of Γ relates the exogenous latent traits to the endogenous latent traits. It defines the causal relationships between the exogenous variables of job characteristics and organizational climate and the endogenous variables of job satisfaction and job performance. In the model, Γ is specified as full and free.

In each model there are also errors of specification, ξ_1 for job satisfaction and ξ_2 for job performance. These were not considered in the computation of causal effect coefficients, hence were left out of the eight investigated models.

Path analysis based on supervisory ratings of job performance and the "is now" operationalization of job satisfaction.--For supervisory ratings of job performance and operationalization of job satisfaction in accordance with the "is now" approach, the correlation matrix to be analyzed is shown in Table 57.

The results of these two path analyses are shown as Models A_1 and A_2 in Figures 5 and 6, respectively. It should be repeated that the double arrow between job characteristics and organizational climate means that this relationship is unanalyzed; it could be causal or spurious.

Table 57.--Correlation matrix of the endogenous and exogenous variables (supervisory ratings of performance and "is now" operationalization of job satisfaction).

	Job Satisfact.	Job Perform.	Job Character.	Organiz. Climate
Job satisfaction	1.00			
Job performance	.14	1.00		
Job characteristics	.74	.09	1.00	
Organiz. climate	.45	.02	.36	1.00

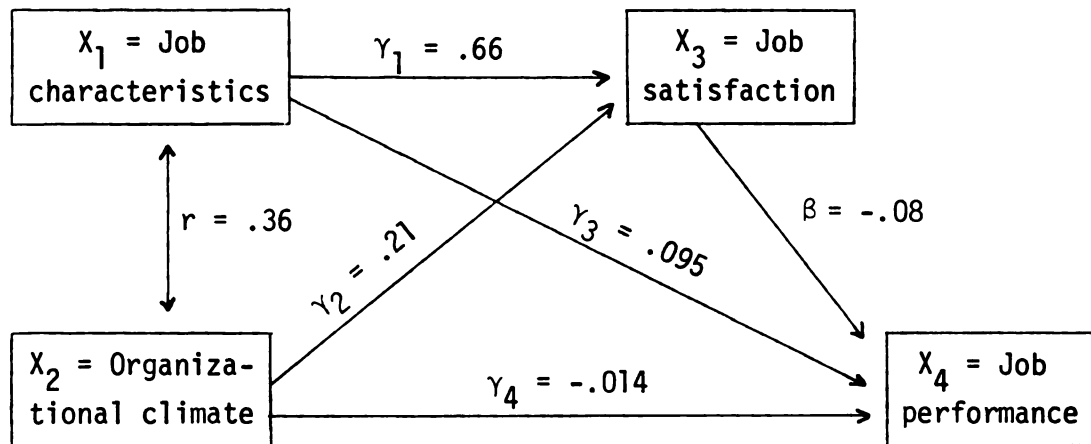


Figure 5.--Model A₁: Path analysis. Causal direction from job satisfaction to job performance (supervisory ratings of performance and "is now" operationalization of satisfaction).

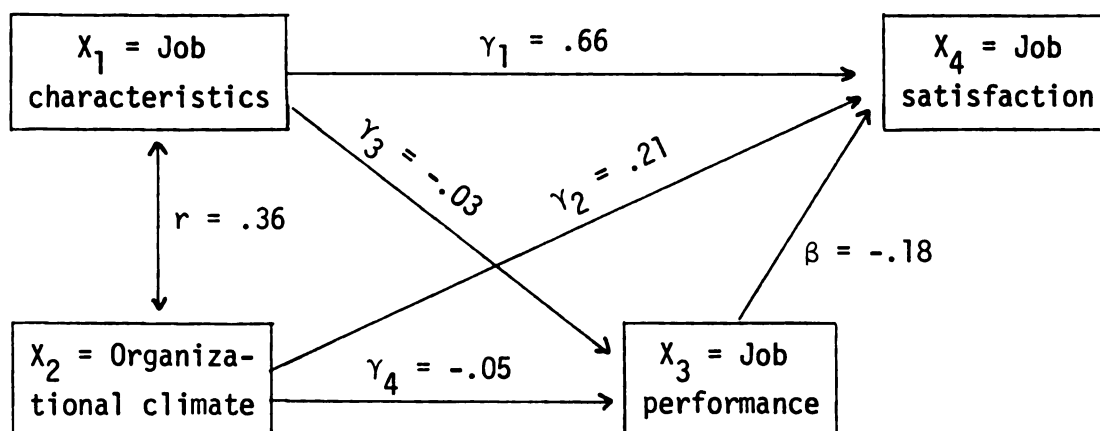


Figure 6.--Model A₂: Path analysis. Causal direction from job performance to job satisfaction (supervisory ratings of performance and "is now" operationalization of satisfaction).

In comparing the model solution to the real data, the test of significance showed $\chi^2 = .0000$ and $p = 1.0000$ for both Models A₁ and A₂. This means that the structural model fitted the data. The effect coefficients of job characteristics and organizational climate on job satisfaction and performance were computed as follows:

Model A₁:

$$C_{1,3} = \gamma_1 = \underline{\underline{.66}}$$

$$C_{2,3} = \gamma_2 = \underline{\underline{.21}}$$

$$C_{1,4} = \gamma_3 + \gamma_1 \cdot \beta = \underline{\underline{0.04}}$$

$$C_{2,4} = \gamma_4 + \gamma_2 \cdot \beta = \underline{\underline{-.03}}$$

$$C_{3,4} = \beta = \underline{\underline{-.08}}$$

Model A₂:

$$C_{1,3} = \gamma_3 = \underline{\underline{-.03}}$$

$$C_{2,3} = \gamma_4 = \underline{\underline{-.05}}$$

$$C_{1,4} = \gamma_1 + \gamma_3 \cdot \beta = \underline{\underline{.67}}$$

$$C_{2,4} = \gamma_2 + \gamma_4 \cdot \beta = \underline{\underline{.22}}$$

$$C_{3,4} = \beta = \underline{\underline{-.18}}$$

From this analysis, and given the two models, one can conclude that there was a weak negative reciprocal causal relationship between job satisfaction and job performance. This means that if the level of job performance was increased, it would have a weak negative effect on the level of job satisfaction. That is, the lower the job performance, the higher satisfaction employees will experience. As a whole, job performance was very weakly related to and caused by the other three variables, whether Model A_1 or Model A_2 was considered.

In both models of causal direction, the effects of job characteristics and organizational climate were exclusively on job satisfaction, not on job performance. These effects were rather high: $C_{1,3} = .66$ and $C_{2,3} = .21$ in Model A_1 , and $C_{1,4} = .67$ and $C_{2,4} = .22$ in Model A_2 . This means that if high job satisfaction is a goal, job characteristics are the single most important cause within the four-variable pattern that can be manipulated, first and foremost. The second most important factor is organizational climate. However, because the correlation between job characteristics and climate is unanalyzed, their effects on job satisfaction are not easily separated. Diagnosing and developing the climate of the organization may also contribute considerably to higher employee satisfaction. This satisfaction, however, had no effect--or a slightly negative effect--on the level of job performance.

Furthermore, in considering the strength of the weak negative effect of job satisfaction on performance (and vice versa) in the two models, the causal direction job satisfaction \rightarrow job performance had the weakest negative effect ($-.08$ versus $-.18$). That is, Model A_1 is

preferred, assuming that an organizational goal is to develop a causal relationship as small negative (or as large positive) as possible between job satisfaction and performance.

It is difficult to explain this negative causal relationship between job satisfaction and performance. There may be aspects of the incentive system, other than the parts related to job characteristics and organizational climate, that are important in establishing a positive causal relationship between satisfaction and performance, as discussed in Chapter II with regard to Lawler and Porter's (1967) research. These incentives could be intrinsic, such as ideological/political commitment in the Tanzanian culture, or they could be extrinsic, such as wage and promotion systems.

Path analysis based on self-ratings of job performance and the "is now" operationalization of job satisfaction.--In this section, the two model solutions for self-ratings of job performance and the "is now" operationalization of job satisfaction are investigated. The correlation matrix to be analyzed is shown in Table 58.

Table 58.--Correlation matrix of the endogenous and exogenous variables (self-ratings of performance and "is now" operationalization of job satisfaction).

	Job Satisfact.	Job Perform.	Job Character.	Organiz. Climate
Job satisfaction	1.00			
Job performance	.15	1.00		
Job characteristics	.74	.16	1.00	
Organiz. climate	.45	.07	.36	1.00

The results of these path analyses are shown as Models B₁ and B₂, represented in Figures 7 and 8, respectively.

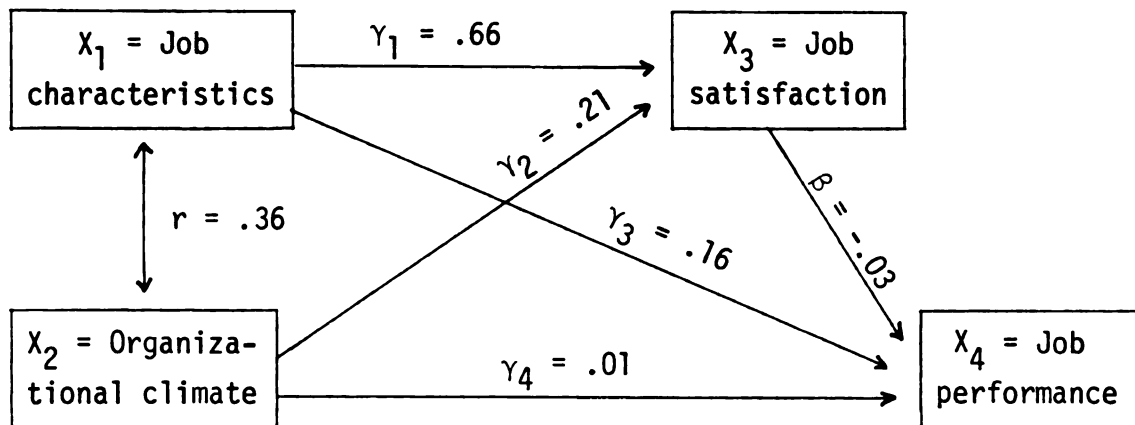


Figure 7.--Model B₁: Path analysis. Causal direction from job satisfaction to performance (self-ratings of performance and "is now" operationalization of satisfaction).

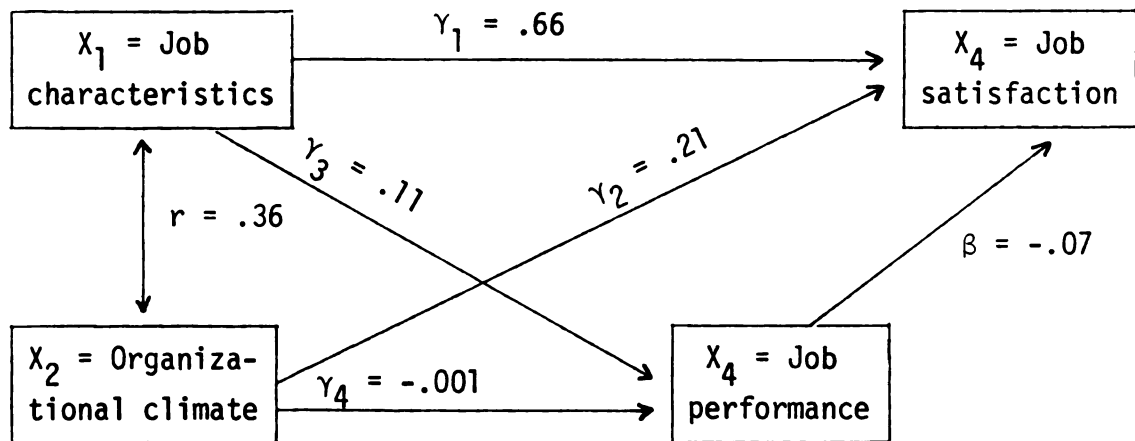


Figure 8.--Model B₂: Path analysis. Causal direction from job performance to satisfaction (self-ratings of performance and "is now" operationalization of satisfaction).

In comparing the model solution to the real data, the test of significance showed that $\chi^2 = .0000$ and $p = 1.0000$ for both Model B₁ and Model B₂. The effect coefficients were computed as follows for Models B₁ and B₂:

Model B₁:

$$C_{1,3} = \gamma_1 = \underline{\underline{.66}}$$

$$C_{2,3} = \gamma_2 = \underline{\underline{.21}}$$

$$C_{1,4} = \gamma_3 + \gamma_1 \cdot \beta = \underline{\underline{.14}}$$

$$C_{2,4} = \gamma_4 + \gamma_2 \cdot \beta = \underline{\underline{.004}}$$

$$C_{3,4} = \beta = \underline{\underline{-.03}}$$

Model B₂:

$$C_{1,3} = \gamma_3 = \underline{\underline{.11}}$$

$$C_{2,3} = \gamma_4 = \underline{\underline{-.001}}$$

$$C_{1,4} = \gamma_1 + \gamma_3 \cdot \beta = \underline{\underline{.65}}$$

$$C_{2,3} = \gamma_2 + \gamma_4 \cdot \beta = \underline{\underline{.21}}$$

$$C_{3,4} = \beta = \underline{\underline{-.07}}$$

This analysis provided the same major result as for Models A₁ and A₂: The weakest negative causal direction was from job satisfaction to performance ($C_{3,4} = 0.03$ versus $C_{3,4} = -.07$). However, they were both near zero, hence negligible. In these two models with self-ratings of job performance, the effect of job characteristics on job performance was not negligible ($C_{1,4} = .14$ in Model B₁ and $C_{1,3} = .11$ in Model B₂). Self-perceived job performance made this causal relationship stronger than that for supervisory ratings of job performance. When the amount of positive attributes of job characteristics increased, employees perceived both their level of performance and the level of job satisfaction to be higher.

Path analysis based on supervisory ratings of job performance and the discrepancy theory and operationalization of satisfaction.--

For supervisory ratings of job performance and operationalization of job satisfaction in accordance with the discrepancy approach, the correlation matrix to be analyzed is shown in Table 59.

Table 59.--Correlation matrix of the endogenous and exogenous variables (supervisory ratings of performance and discrepancy operationalization of satisfaction).

	Job Satisfact.	Job Perform.	Job Character.	Organiz. Climate
Job satisfaction	1.00			
Job performance	-.01	1.00		
Job characteristics	.39	.09	1.00	
Organiz. climate	.36	.02	.36	1.00

The results of the next pair of path analyses are shown as Models C_1 and C_2 , represented in Figures 9 and 10, respectively.

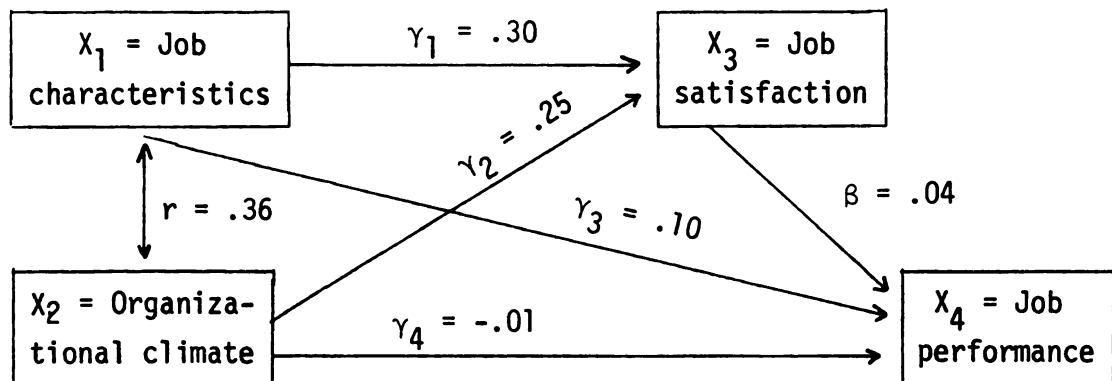


Figure 9.--Model C_1 : Path analysis. Causal direction from job satisfaction to performance (supervisory ratings of performance and "should be - is now" operationalization of satisfaction).



Figure 3. Path analysis. Correlation between characteristics and climate is .36. The path coefficients are: characteristics to performance (.10), climate to performance (.05), and characteristics to climate (.36).

Climate
Job characteristics
Job performance
Job satisfaction

Table 3. Correlation matrix
(upper triangle)
Climate/Job
Job characteristics
Job performance
Job satisfaction

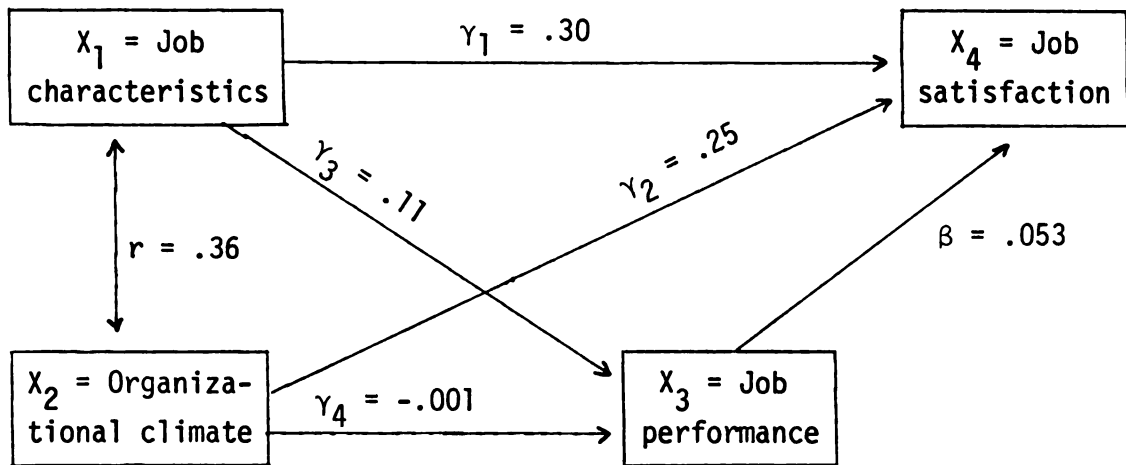


Figure 10.--Model C₂: Path analysis. Causal direction from job performance to satisfaction (supervisory ratings of performance and "should be - is now" operationalization of satisfaction)

In comparing the model solution to the real data, the test of significance showed that $\chi^2 = .0000$ and $p = 1.0000$ for both Model C₁ and Model C₂. The effect coefficients were:

Model C₁:

$$C_{1,3} = \gamma_1 = \underline{.30}$$

$$C_{2,3} = \gamma_2 = \underline{.25}$$

$$C_{1,4} = \gamma_3 + \gamma_1 \cdot \beta = \underline{.11}$$

$$C_{2,4} = \gamma_4 + \gamma_2 \cdot \beta = \underline{.00}$$

$$C_{3,4} = \beta = \underline{.04}$$

Model C₂:

$$C_{1,3} = \gamma_3 = \underline{.11}$$

$$C_{2,3} = \gamma_4 = \underline{-.001}$$

$$C_{1,4} = \gamma_1 + \gamma_3 \cdot \beta = \underline{.31}$$

$$C_{2,4} = \gamma_2 + \gamma_4 \cdot \beta = \underline{.25}$$

$$C_{3,4} = \beta = \underline{.05}$$

These results show that there was a very weak positive, causal, and reciprocal relationship between satisfaction and performance. The

two causal directions were about equally weak ($C_{3,4} = .04$ versus $C_{3,4} = .05$).

According to the computed effect coefficients, job characteristics and organizational climate had about the same effect on job satisfaction in both models. It is, however, essential to stress that their effects on job satisfaction are not easily separated because job characteristics and organizational climate are correlated, and this correlation is unanalyzed. This correlation was not too high. Therefore, the condition of multicollinearity does not exist. According to the γ -estimates, job characteristics had a low positive effect on job performance, regardless of the causal direction between satisfaction and performance ($C_{1,4} = .11$ and $C_{1,3} = .11$).

Path analysis based on self-ratings of job performance and the discrepancy theory and operationalization of satisfaction.--In this section, the two model solutions for self-ratings of job performance and the discrepancy operationalization of job satisfaction are investigated. The correlation matrix to be analyzed is shown in Table 60.

Table 60.--Correlation matrix of the endogenous and exogenous variables (self-ratings of performance and discrepancy operationalization of satisfaction).

	Job Satisfact.	Job Perform.	Job Character.	Organiz. Climate
Job satisfaction	1.00			
Job performance	-.12	1.00		
Job characteristics	.39	.16	1.00	
Organiz. climate	.36	.07	.36	1.00

The results of the next pair of path analyses are shown as Models D₁ and D₂, represented in Figures 11 and 12, respectively.

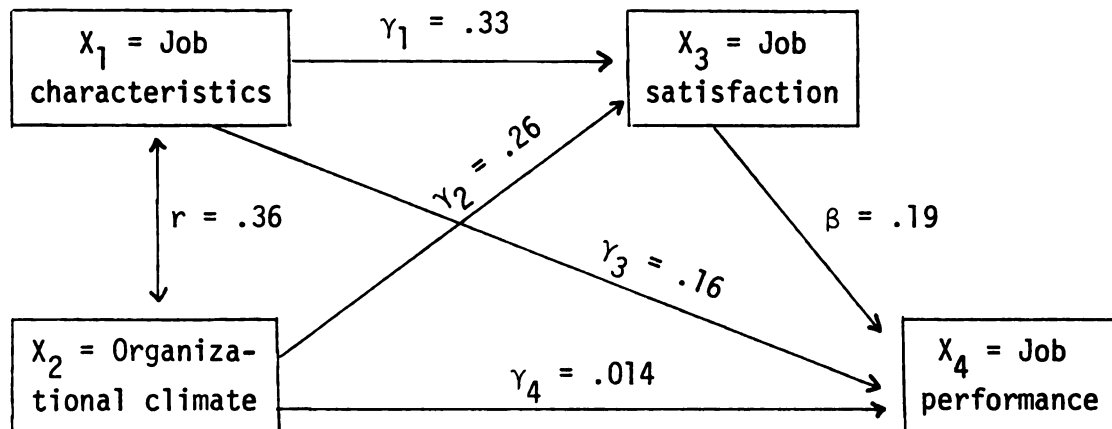


Figure 11.--Model D₁: Path analysis. Causal direction from job satisfaction to performance (self-ratings of performance and "should be - is now" operationalization of satisfaction).

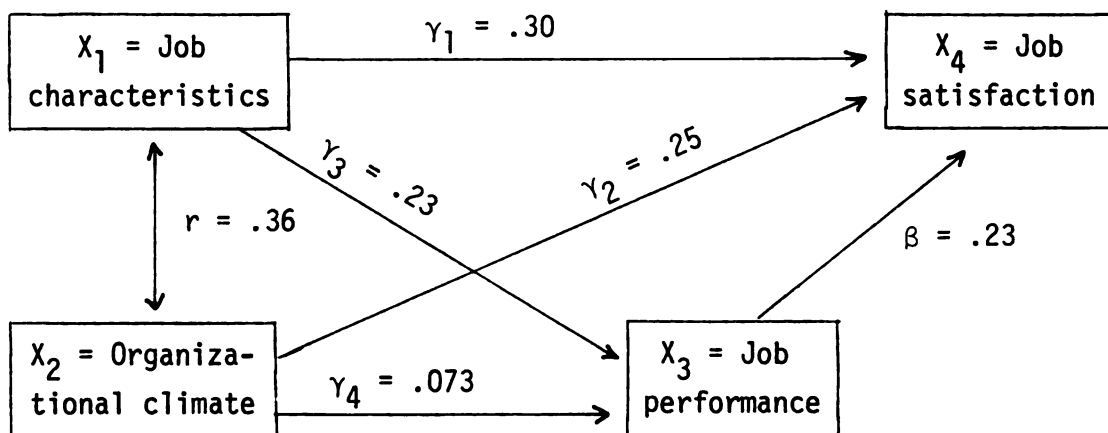


Figure 12.--Model D₂: Path analysis. Causal direction from job performance to satisfaction (self-ratings of performance and "should be - is now" operationalization of satisfaction).

In comparing the model solution to the real data, the test of significance showed that $\chi^2 = .0000$ and $p = 1.0000$ for both Model D_1 and Model D_2 . The effect coefficients were:

Model D_1 :

$$C_{1,3} = \gamma_1 = \underline{.33}$$

$$C_{1,4} = \gamma_3 + \gamma_1 \cdot \beta = \underline{.22}$$

$$C_{2,3} = \gamma_2 = \underline{.26}$$

$$C_{2,4} = \gamma_4 = \gamma_2 \cdot \beta = \underline{.06}$$

$$C_{3,4} = \beta = \underline{.19}$$

Model D_2 :

$$C_{1,3} = \gamma_3 = \underline{.23}$$

$$C_{1,4} = \gamma_1 + \gamma_3 \cdot \beta = \underline{.35}$$

$$C_{2,3} = \gamma_4 = \underline{.07}$$

$$C_{2,4} = \gamma_2 + \gamma_4 \cdot \beta = \underline{.27}$$

$$C_{3,4} = \beta = \underline{.23}$$

These results show that there was a moderately high positive, causal, and reciprocal relationship between job satisfaction and performance ($C_{3,4} = .19$ for Model D_1 and $C_{3,4} = .23$ for Model D_2). Job satisfaction causes performance, and performance causes satisfaction. This is in accordance with the circular model of Sutermeister (1971) as described in Chapter II.

As in the previous models, the effects of job characteristics and organizational climate on satisfaction were larger than the same effects on performance. However, job characteristics had a non-negligible effect on performance ($D_{1,4} = .22$ in Model D_1 and $C_{1,3} = .23$ in Model D_2). The amount of job characteristics had an effect on both endogenous variables.

From this path analysis, the following statements can be made as regards the relationship between the two endogenous variables:

1. When job satisfaction was operationalized in accordance with the "is now" approach, there was a very weak negative, causal, and reciprocal relationship between job satisfaction and performance. This relationship existed for both supervisory ratings and self-ratings of job performance. The reciprocal relationships were not very different in strength. However, the strongest causal direction was: job performance \rightarrow job satisfaction.

2. When job satisfaction was operationalized in accordance with the discrepancy theory ("should be - is now"), there was a weak to moderate positive, causal, and reciprocal relationship between job satisfaction and performance. For supervisory ratings of performance, the relationship was weak ($C_{3,4} = .04$ and $C_{3,4} = .05$). For self-ratings of performance, the relationship was moderately high ($C_{3,4} = .19$ and $C_{3,4} = .23$). The reciprocal relationships were not very different in strength. However, the strongest causal direction was: job performance \rightarrow job satisfaction.

3. Hypothesis 15 was not supported.

It is difficult to explain why the operationalization of satisfaction in accordance with the discrepancy theory provided a stronger positive causal relationship between performance and satisfaction than did the "is now" operationalization. The zero-order correlations (Table 38) showed a positive relationship ($p < .01$) between these two variables when the "is now" operationalization was used, but a negative relationship (not significant at $p < .01$) when the "should be - is now" operationalization was used. If one assumes that most organizations strive toward and succeed in establishing a positive, although weak,

relationship between satisfaction and performance, it could well be that the discrepancy theory of job satisfaction captures reality more accurately than does the more absolute ("is now") way of measuring satisfaction. Another possibility is that extraneous variables not accounted for in the four-variable model were confounded with and affected the performance/satisfaction relationship differently in the two ways job satisfaction was operationalized.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS FOR FUTURE RESEARCH

As a developing country, Tanzania is making great efforts to develop the country toward the national goal of self-reliance. In these efforts hard work in its broadest sense is probably the single most important factor. The question of how to increase work motivation, job satisfaction, job performance, and organizational effectiveness becomes a crucial one in the further struggle for self-reliance, founded in the particular Tanzanian socialism. As in most countries, an optimization of job satisfaction and performance is a positive goal.

To increase job satisfaction and job performance, commitment to the particular Tanzanian ideology, to its democratic leadership philosophy, and to "workers' participation" may to some extent boost job satisfaction and performance. However, job design/redesign and developing proper organizational climates also seem to constitute rich potentials for increasing performance and satisfaction on the job. Furthermore, adequate, just, and well-communicated incentive systems, based on both intrinsic and extrinsic factors, may increase not only job satisfaction and performance but also the causal reciprocal relationship between them.

This researcher primarily investigated correlates of job satisfaction and performance. He researched job satisfaction and

performance as functions of job characteristics and organizational climate, as well as the causal direction between job satisfaction and performance. The investigations were mainly done across eight Tanzanian organizations: three higher education institutions and five production firms in three different parts of the country.

Summary of Findings

This study showed the following findings:

1. a. The index of organizational climate (87 items) was found to consist of four underlying factors, which were named (a) structural aspects of organizational climate, (b) freedom from supervisory arbitrariness and antisupervisory behavior, (c) climate for interpersonal relations, and (d) climate for demanding but realistic work standards. These underlying factors or subvariables of organizational climate were identified by using factor analysis, orthogonal rotation of the factor matrix.

b. A weak positive relationship was found between employee-perceived organizational climate and climate ratings by external consultants ($r_{\text{Spearman}} = .57$, n.s.; a liberal estimate was $r_{\text{Spearman}} = .54$, n.s., and a conservative estimate $r_{\text{Spearman}} = .92$, $p < .01$).

c. A significantly lower interorganizational than intra-organizational climate difference was found ($r_{\text{intraclass}} = .26$, $F = 11.029$, $p = .0000$). The climate differences were organization-specific and not a result of differences in organization type.

2. The index of job characteristics (18 items) was found to consist of five underlying factors, which were named (a) open opportunities related to own work, (b) impact of job on other people,

(c) performance feedback, (d) job prestige, and (e) actual growth and development.

3. a. The index of job satisfaction (24 items) was investigated, as regards factor structures, for both the "is now" and the discrepancy operationalizations of satisfaction. Five underlying factors were found for the "is now" operationalization of job satisfaction. These were named (a) opportunity to be someone important, (b) private attitudes that make the employee like his job, (c) organizational characteristics affecting the employee's feelings about his job, (d) feelings toward immediate superior, and (e) physical and social conditions. Six underlying factors were found for the discrepancy operationalization of satisfaction. These were named (a) attributes of a good job, (b) job challenge and accomplishment, (c) pleasant work group climate, (d) independence on the job, (e) freedom from job guilt, and (f) opportunity for variety.

b. The correlation between the "is now" and the discrepancy operationalizations of job satisfaction was quite high ($r = .59$, $p < .001$).

4. a. A low positive relationship was found between composite measures of self-ratings and immediate-supervisor ratings of job performance ($r = .16$, $p < .01$).

b. Employees rated their own job performance significantly higher than their supervisors did ($p = .000$).

c. The correlation between self-ratings and supervisory ratings of job performance was significant for higher education institutions ($.39$, $p < .001$) but not for production firms ($.06$).

d. The relationship between self-ratings and supervisory ratings of job performance was significantly higher for employees with high education than for employees with low education ($r = .34$ and $r = .11$, respectively; difference significant at $p = .05$). This relationship did not change for different position levels. The relationship tended to be higher for higher-level combinations of education/position level than for lower-level combinations.

5. For the aggregated data, positive zero-order correlations were found between the four major variables: job characteristics, organizational climate, job satisfaction, and job performance.

a. The highest correlation (.74) was found between job characteristics and job satisfaction ("is now").

b. The correlation between self-ratings of job performance and the "is now" operationalization of job satisfaction was .15 ($p < .01$), and the correlation between supervisory ratings of performance and the "is now" operationalization of satisfaction was .14 ($p < .01$). Job satisfaction operationalized in accordance with the discrepancy theory was not significantly related to self-ratings (-.12) or supervisory ratings (-.01) of job performance.

c. The zero-order correlations between subvariables of job characteristics, subvariables of organizational climate, and subvariables of job satisfaction were mostly positive, and many of them were significant at $p < .001$. The subvariables of job performance mainly showed nonrelationships with subvariables of the other three variables.

6. A low positive relationship was found between job satisfaction and supervisory ratings of performance for higher education institutions

(.26, $p < .05$), but no relationship was found for production firms (.07, n.s.).

7. Employees agreed more on organizational climate than on job satisfaction. (For organizational climate, $r_{\text{intraclass}} = .26$; for job satisfaction, $r_{\text{intraclass}} = .12$).

8. Employees of Tanzanian higher education institutions had a tendency to experience higher satisfaction than did employees in production firms. Two of the five facets of satisfaction were higher in educational organizations ($t_2 = -3.29$, $p = .001$; $t_5 = -2.97$, $p = .003$).

9. Among the investigated variables and relationships, the following correlates of job satisfaction ("is now") were identified: educational level (.16, $p < .05$), position level (.18, $p < .001$), job characteristics (.74, $p < .001$), organizational climate (.45, $p < .001$), and job performance (.15 for self-ratings and .14 for supervisory ratings, $p < .01$).

10. Correlates of job performance were found to be: educational level (.10, $p < .05$), position level (.24, $p < .001$), job characteristics (for self-ratings of performance only, .16, $p < .001$), and job satisfaction (for the "is now" operationalization only, .15 for self-ratings and .14 for supervisory ratings, $p < .01$).

11. a. Among the demographic variables, educational level and position level tended to correlate with the relationship between job satisfaction and performance. Education was a significant correlate of the job satisfaction/quantitative performance relationship ($r = .27$, $r = .18$, and $r = .01$, $p_{\text{difference}} = .045$ for a trichotomized education variable). Combinations of education/position levels had a tendency

to correlate only with the relationship between job satisfaction and performance.

b. Job characteristics and organizational climate were not found to be correlates of the satisfaction/performance relationship.

12. a. Job satisfaction was found to be a function of both job characteristics and organizational climate. Path analysis showed that the higher the amount of positive job attributes and climate facets, the higher the level of satisfaction employees experienced. There was no interaction effect of job characteristics/organizational climate on job satisfaction.

b. Path analysis showed that there was only a small causal effect of job characteristics on job performance, when this was rated by superiors. For self-ratings of job performance, job characteristics had a small positive effect on job performance. Organizational climate had no causal effect on job performance, regardless of what performance measure was used. No interaction effect of job characteristics and organizational climate on job performance was found.

13. a. A very weak negative, causal, and reciprocal relationship was found between the endogenous variables job satisfaction and performance when satisfaction was operationalized in accordance with the "is now" approach.

b. A weak to moderate positive, causal, and reciprocal relationship was found between job satisfaction and performance when satisfaction was measured in accordance with the discrepancy theory of job satisfaction. Job satisfaction caused performance, and performance

caused satisfaction. The strongest causal direction was: job performance → job satisfaction.

Conclusions

In their work philosophy and practice, Tanzanian organizations are emphasizing hard work, workers' participation, and a participative/democratic leadership style in an effort to develop in workers an attitude of self-reliance and self-sufficiency. However, high work motivation, high job satisfaction, and high performance and productivity must go hand in hand. Of particular importance is the optimization of the endogenous variables job satisfaction and job performance. In this study it was found that positive job attributes (job characteristics) had a strong causal effect on job satisfaction. The effect of this exogenous latent trait on job performance was much smaller, but not negligible, when the performance measure was based on self-ratings. It was also found that the exogenous latent trait organizational climate had a causal effect on job satisfaction, but not on job performance. Finally, there was a weak to moderate positive, causal, and reciprocal relationship between job satisfaction (discrepancy theory) and job performance in the investigated Tanzanian organizations. Job performance caused satisfaction, and satisfaction caused performance. A circular cause-effect relationship existed.

These results indicate that much effort should be put into improving job attributes or job characteristics as the single most important determinant of employee satisfaction. This means an emphasis on job design and redesign, including the technique of job

enrichment. The results of this study also indicated that development of inspiring and enriching organizational and subunit climates seems to be the second most important determinant to enhancing satisfaction on the job. It was found that employees in higher education institutions were more satisfied than employees in production firms. This may indicate that job characteristics were more favorable in the former type of organization. This is natural because there are fewer blue-collar workers in higher education institutions. A great portion of the employees in such institutions work with teaching/training, research, student guidance, consultation, and administration. On the other hand, a great portion of the employees in Tanzanian production firms are unskilled, semi-skilled, or skilled blue-collar workers, and their tasks are not as intrinsically rewarding as those of academics and administrators in higher education institutions. This superior intrinsic job reward of employees in educational institutions is first and foremost attributed to more favorable job characteristics and may partially explain the differences in job satisfaction between the two types of organizations. Besides job analysis and job enrichment, socio-didactic analysis may contribute toward better intrinsic rewards in higher education institutions.

The findings of this study showed that organizational climate also contributed to job satisfaction. Socio-didactic analysis includes development of job characteristics as well as organizational climate. It includes changes in task structure and in the relationship among subjects, among teachers, among teachers and students, and among students.

A great amount of positive job attributes also seems, to a certain degree, to cause higher job performance. Even though job characteristics and organizational climate did not prove to increase significantly the relationship between job satisfaction and performance, these potential determinants of performance, satisfaction, and the strength of the satisfaction/performance relationship should not be disregarded. There may be other extraneous variables, not investigated in this study, that may confound or distort these potential determinants of the satisfaction/performance relationship. Efforts to increase performance and satisfaction by identifying determinants other than characteristics and organizational climate, for example, the total reward system, are worthwhile in developing the Tanzanian culture toward self-reliance. Both extrinsic and intrinsic incentives need to be integrated in a sound and feasible reward system. Then the strength of the performance/satisfaction relationship is likely to increase. The stronger this relationship is, the more effective the organization is in distributing rewards differentially.

In a broader life and career perspective, employees need to see a worthwhile future with continuous opportunities for personal growth, development, and career advancements that are beneficial to both the individual employee and to the organization. In this sense, education and training opportunities become essential to an ever-increasing part of the Tanzanian population. This study showed that there was a positive relationship between education and job satisfaction, and between education and performance as well. Opportunities for personal development and advancement related to work seem to play a great role in

enhancing job satisfaction and performance and will probably play an even greater role in the future. But this training/advancement factor is only one part of the whole reward and advancement system of an organization. Even job attributes and organizational climate can be considered as parts of the reward structure, as parts of mostly intrinsic incentives.

These factors and findings lead to a few conclusive statements: There are a number of intrinsic and extrinsic kinds of work incentives that can be developed and used to enhance job satisfaction, performance, and their interrelationship. Job characteristics and organizational climate factors, including opportunities for training and development, are some determinants that were investigated in this study. To strengthen the potential effect of job attributes on job satisfaction and performance, job analysis, job design, and job redesign are recommended. To strengthen the potential effect of climate factors on job satisfaction, leadership and group development as well as structural and organizational changes are recommended because such development and changes are likely to result in organizational and subunit climates that tend to enhance job satisfaction.

These developmental recommendations can and should be regarded as parts of a systems approach to change and development. Organization analysis/diagnosis and development constitute such a systems approach that probably best can apply or accommodate research results of the present study, outcomes of other organizational studies, and future research in the Tanzanian organizational culture.

Tanzanian scholars will probably find it beneficial to use some of the results and problems discussed in this study in their own teaching of organizational behavior. They may also find it beneficial to study this research as a basis for designing their own research studies. In this regard, it is hoped that the recommendations for future research described in the next section will provide fruitful direction.

Recommendations for Future Research

During this research study, several ideas and questions surfaced as to how this research could have been improved or extended, and what directions future organization research in the Tanzanian culture should take. One of the most important research questions with great practical relevance to Tanzanian organizations is how to design reward systems that are causally related to both job satisfaction and job performance and that, simultaneously, are able to increase the strength of the relationship between satisfaction and performance. The value of such research and developmental efforts may show up as higher organizational effectiveness and productivity as well as higher need satisfaction of individual employees. The ultimate acceptable goal of work cultures in all corners of the world should be, and has to be, an optimization of the happy, productive worker.

Before the satisfaction/performance relationship is investigated further, it would be advantageous to carry out some more basic research particularly related to the Tanzanian work culture with its idiosyncrasies. A comprehensive study of values and needs among employees in organizations and among the rural population would be

profitable for future research and organizational development within such areas as job characteristics and job design, organizational climate, group climates, and feasible rewards and reward systems.

Furthermore, research efforts to develop indices of interesting and relevant exogenous and endogenous variables would be necessary if one wants to improve the validity of future organizational research. Of course, these indices need to be developed and standardized for use in Tanzanian organizations.

Organizational climate is a very fuzzy concept that probably is more valid the smaller the organization is. The reason for this statement is a belief that employees in large organizations do not know all organizational variables that are relevant for a valid organizational climate measure. Then, employees tend to respond to items intended to be measured at the organizational level, but with response reference to subunits, such as a department or a work group. Therefore, it is recommended that climates of different subunits be measured, rather than a global organizational climate.

The following specific problems for future research are recommended:

1. Determination of the basic work values and job needs of Tanzanians, and how these values and needs change when people move from a rural work culture to a modern organizational work culture.

2. Development of standardized indices of latent traits, such as organizational climates, job content/context, and job satisfaction. If the global measure of organizational climate is used, one must make sure that the items are organizational/descriptive oriented.

Similarly, job satisfaction items have to be individual/evaluative oriented and not organizational/descriptive oriented.

3. A study of how best to operationalize and measure job performance for research as well as reward/promotion purposes. Of particular interest is the development of Behavioral Observation Scales (BOS), as described by Latham and Wexley (1977) and by Latham, Fay, and Saari (1979).

4. Climate measures should be obtained for different organizational subunits--for example, a climate measure for each department, work group, and so on. This may provide more valid measures of climates than would a global organizational measure. The result of this approach may be that the climate variable would turn out to be a stronger correlate of job satisfaction and performance, and hopefully also of the relationship between them.

5. Different operationalizations of job satisfaction provide a challenging area of research as regards construct validity. The discrepancy theory of satisfaction, the "is now" operationalization, and the weighting question (for example, by the "importance" item) are of particular relevance to the problem of construct validity.

6. Investigation of the causal relationships among relevant variables is crucial in future research, particularly the causal relationship between job satisfaction and performance. Identification of more exogenous variables than job characteristics and organizational climate is necessary to account for a larger percentage of the variation in job satisfaction and performance, and to build an adequate reward system that is related to job satisfaction, to performance, and

to their relationship. It may be of particular interest to investigate exogenous variables, such as individual abilities and role perceptions.

Research designs that more strongly can argue cause-effect relationships should be used. Measurements at different times justify the use of cross-lagged correlation analysis and can better argue cause-effect. Path analysis and the linear structural analysis of covariance matrices that was worked out by Jöreskog (1976) seem promising in investigating causal directions in the total pattern of variables.

7. Last, but probably most important, is research on and development of rewards and reward systems that enhance work motivation and optimize job satisfaction and performance and simultaneously contribute to an increase in the strength of the relationship between job satisfaction and performance.

APPENDICES

APPENDIX A

ORGANIZATIONAL CLIMATE: FACTOR MATRIX

AND COMMUNALITIES

APPENDIX A

ORGANIZATIONAL CLIMATE: FACTOR MATRIX
AND COMMUNALITIES

Item # ^a	Factor 1	Factor 2	Factor 3	Factor 4	Communality
1	.31	.26	.20	.13	.22
3	.41	.19	.08	.16	.24
5	.42	.11	.14	.25	.28
6	.39	.21	.08	.16	.23
11	.41	.09	.21	.27	.29
12	-.42	-.05	-.08	-.33	.29
13	.57	.14	-.08	.19	.39
18	.53	.16	.14	.10	.33
21	.33	.18	.29	.10	.23
22	.34	-.08	.16	-.11	.16
23	.60	.24	.02	.09	.43
25	.43	.08	.22	.23	.29
26	.37	.18	.16	.28	.28
27	.48	.13	.23	.21	.35
28	-.28	.18	-.06	.12	.13
33	.68	.12	.05	.14	.50
34	.54	.07	.18	.39	.48
35	.59	.09	.24	.26	.48
36	.40	-.21	.08	.07	.21
37	.57	.09	.23	.01	.39
38	.39	-.19	.15	-.15	.23
43	.62	.11	.12	.22	.46
44	.53	.18	.20	.25	.42
45	.53	.12	.19	.10	.34
47	.41	-.06	.23	.26	.29
55	.63	.16	.14	.20	.49
58	.53	.10	.17	-.07	.33
61	.36	-.03	.25	.11	.21
63	.65	.10	.14	.04	.46
64	.67	.11	.15	.12	.50
66	.34	-.05	.25	.01	.18
72	.38	.01	.13	.02	.16
73	.71	.15	.13	.08	.55
74	.54	.16	.10	.09	.34
78	.47	.11	.25	.17	.33
80	.55	.14	.21	.07	.38
81	.52	.02	.10	.09	.29
82	.52	.02	.23	.01	.32
86	.60	.16	.10	.11	.41

Item # ^a	Factor 1	Factor 2	Factor 3	Factor 4	Communality
8	.05	.41	.09	.10	.19
10	.05	.44	.04	.16	.22
15	.17	.60	.06	.02	.39
17	-.03	.47	-.17	-.10	.26
19	.20	.51	.04	.28	.38
24	-.18	.30	-.10	-.12	.15
30	.06	.50	.09	.01	.26
41	-.06	.46	-.06	-.17	.25
46	.03	.58	.09	.08	.35
48	.02	.44	-.08	.07	.21
53	.12	.50	.01	.22	.32
57	.25	.57	-.06	.07	.40
59	.00	.52	-.02	.30	.36
62	.20	.50	.08	.17	.33
65	.13	.55	.01	-.06	.33
67	.07	.63	.11	.03	.41
69	.16	.45	.06	-.13	.25
70	-.05	.39	-.10	-.16	.19
75	.23	.55	.03	-.12	.37
76	.12	.50	.06	.06	.27
77	.11	.47	.19	.04	.27
79	-.13	.40	.20	.04	.22
83	.17	.54	-.13	-.09	.35
84	-.02	.56	.17	.05	.34
89	.24	.50	-.11	.02	.35
16	.30	.22	.31	.19	.27
20	.20	.03	.33	.15	.18
29	.28	.06	.30	.27	.24
32	.05	-.02	.29	.11	.10
39	.33	-.04	.45	.29	.40
40	.26	.10	.58	.01	.42
42	-.22	.22	-.31	-.27	.26
49	.24	.04	.37	.03	.20
50	.14	.21	.63	-.17	.49
51	.15	.01	.48	.16	.28
54	.07	.04	.45	.35	.33
56	.19	.02	.54	.02	.33
68	.16	.02	.58	.09	.37
71	.12	-.20	.36	-.03	.19
85	.03	.25	-.26	-.12	.15
87	.14	.10	.55	.18	.37
88	.37	.11	.39	.08	.31

Item # ^a	Factor 1	Factor 2	Factor 3	Factor 4	Communality
2	.18	.03	.24	.26	.16
4	.26	.06	.19	.40	.26
7	.24	-.00	.15	.25	.14
9	.35	.04	.09	.44	.33
14	.33	-.09	.17	.47	.37
31	.37	.02	.27	.48	.43

^aThe item numbers are the same as those referred to and quoted in the Factor Analysis of Organizational Climate section of Chapter IV.

Item #	Factor 1	Factor 2	Factor 3	Factor 4
1	0.10	0.15	0.10	0.10
2	0.10	0.15	0.10	0.10
3	0.10	0.15	0.10	0.10
4	0.10	0.15	0.10	0.10
5	0.10	0.15	0.10	0.10
6	0.10	0.15	0.10	0.10
7	0.10	0.15	0.10	0.10
8	0.10	0.15	0.10	0.10
9	0.10	0.15	0.10	0.10
10	0.10	0.15	0.10	0.10

The first model was used to the factor analysis of the data.

APPENDIX B

JOB CHARACTERISTICS: FACTOR MATRIX
AND COMMUNALITIES

APPENDIX B

JOB CHARACTERISTICS: FACTOR MATRIX
AND COMMUNALITIES

Item # ^a	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Communality
4	.53	.27	.15	.16	.11	.42
8	.48	.36	.09	.13	.19	.42
10	.58	-.03	.11	.26	.24	.48
12	.50	-.02	.19	.21	.19	.37
13	.52	.08	.35	.19	-.08	.47
5	.11	.55	.16	.14	.13	.38
7	.43	.53	.16	-.04	.16	.51
11	.05	-.45	-.02	.01	.01	.20
16	.34	.40	.17	.10	.21	.35
6	.34	.13	.53	.08	.15	.44
15	.23	.30	.32	.07	.25	.31
18	.29	.16	.40	.14	.18	.32
19	.07	.13	.62	.18	.19	.48
9	.28	.03	.14	.70	.14	.61
17	.16	.12	.15	.60	.12	.44
1	.12	.12	.24	.24	.59	.49
2	.12	.34	.18	.19	.44	.39
3	.41	.07	.14	.01	.50	.44

^aThe item numbers are the same as those referred to and quoted in the Factor Analysis of Job Characteristics section of Chapter IV.

APPENDIX C

1. JOB SATISFACTION OPERATIONALIZED AS "IS NOW"
ATTRIBUTES OF THE JOB: FACTOR MATRIX AND
COMMUNALITIES
2. JOB SATISFACTION OPERATIONALIZED IN ACCORDANCE
WITH THE DISCREPANCY THEORY OF SATISFACTION:
FACTOR MATRIX AND COMMUNALITIES

APPENDIX C

1. JOB SATISFACTION OPERATIONALIZED AS "IS NOW" ATTRIBUTES OF THE JOB: FACTOR MATRIX AND COMMUNALITIES

Item # ^a	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Communality
24	.39	.26	.10	.19	.21	.31
30	.33	.31	.10	.19	.21	.30
31	.50	.25	.37	.01	-.02	.45
33	.41	.02	.08	.25	.08	.25
34	.48	.21	.20	.14	.20	.38
41	.60	.33	.15	.08	.24	.55
21	.06	.46	.28	.04	-.08	.31
22	-.01	.51	-.00	.10	.06	.27
23	.27	.39	-.04	.06	.32	.33
27	.17	.45	.08	.13	.03	.25
28	.23	.47	.12	.11	.14	.32
29	.28	.32	.15	-.03	.25	.27
35	.33	.40	.20	.15	.31	.43
40	.42	.47	.14	.11	.17	.46
32	.46	-.03	.52	.24	.11	.55
38	.12	.24	.55	.12	.26	.45
42	.09	.15	.33	.29	.11	.24
43	.22	.11	.58	.20	.20	.47
25	.18	.26	.19	.73	.19	.70
26	.14	.33	.18	.41	.14	.35
39	.43	.07	.20	.47	.03	.46
37	.22	-.01	.23	.18	.32	.23
44	.10	.33	.22	.10	.57	.51
45	.10	.01	.08	.09	.49	.27

^aThe item numbers are the same as those referred to and quoted in the Factor Analysis of Job Satisfaction ("Is Now") section of Chapter IV.

2. JOB SATISFACTION OPERATIONALIZED IN ACCORDANCE WITH THE DISCREPANCY THEORY OF SATISFACTION: FACTOR MATRIX AND COMMUNALITIES.

Item # ^a	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Communality
24	.55	.21	-.07	.17	.38	.04	.53
25	.43	.32	.23	.16	.08	.06	.37
26	.34	.25	.21	.17	-.06	.13	.27
30	.31	.29	.31	-.01	.30	.23	.42
32	.61	.08	.42	.11	.07	.18	.60
33	.52	.17	.07	.19	-.01	.15	.36
34	.52	.25	.18	.10	.24	.08	.43
35	.50	.05	.36	.33	.18	-.07	.53
37	.46	.18	.06	-.02	.13	.11	.28
39	.54	.47	.08	.11	.11	-.04	.55
42	.50	.05	.14	.06	.03	.06	.28
43	.55	-.07	.41	.08	.22	.09	.54
40	.25	.39	.20	.31	.26	-.05	.42
41	.18	.70	.21	.07	.19	.10	.61
38	.27	.30	.41	.11	-.03	.08	.35
44	.18	.20	.53	.05	.10	.13	.39
22	.01	-.03	.11	.63	.03	.06	.42
28	.23	.21	-.07	.38	.09	-.04	.25
31	.26	.23	.09	.37	.19	.03	.31
21	.08	.02	-.10	.31	.37	.25	.32
27	.09	.09	.09	.05	.50	-.03	.28
29	.10	.14	.18	.38	.39	.06	.36
23	.17	.20	.25	.27	.11	.33	.33
45	.13	.02	.10	.02	.01	.61	.40

^aThe item numbers are the same as those referred to and quoted in the Factor Analysis of Job Satisfaction ("Should Be - Is Now") section of Chapter IV.

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