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THE IMPACT OF ORGANIZATIONAL CLIMATE ON THE RELATIONSHIP
BETWEEN JOB CHARACTERISTICS AND JOB SATISFACTION: AN
EMPIRICAL ASSESSMENT OF PUBLIC SECTOR MANAGERS

by
UNSUKE SONG

A dissertation submitted in partial fulfillment
of the requirements for the degree of

DOCTOR OF PHILOSOPHY
in
PUBLIC ADMINISTRATION AND POLICY

Portland State University
1992

TO THE OFFICE OF GRADUATE STUDIES:

The members of the Committee approve the dissertation of Unsuk
Song presented March 6, 1991.

Walter Ellis, Chair

Jerry Lansdowne

Theresa Julnes

David Morgan

James Sours

John Mefflin

APPROVED:

Nohad A. Ioulan, Dean, School of Urban and Public Affairs

C. William Savery, Interim Vice Provost
for Graduate Studies and Research

AN ABSTRACT OF THE DISSERTATION OF Unsuk Song for the Doctor of
Philosophy in Public Administration and Policy presented March 6, 1991.

Title: The Impact of Organizational Climate on the Relationship
Between Job Characteristics and Job Satisfaction: An
Empirical Assessment of Public Sector Managers

APPROVED BY MEMBERS OF THE DISSERTATION COMMITTEE:

Walter Ellis, Chair

Jerry Lansdowne

Theresa Julnes

David Morgan

James Sours

John Heflin

The central purpose of this study was to explore the relationship
between job characteristics and job satisfaction, and the impact of
organizational climate on that relationship in the public sector. The

subjects of the study were all Oregon State Government managers at and above the level of supervisor in all of the state agencies and the judicial branch.

This study was conducted with the use of a survey. Six hundred and fifty-six (656) questionnaires were returned, for a response rate of 66 percent. The questionnaire consisted of four parts. The first part was drawn from the Organizational Climate Questionnaire; the second part was drawn from the Job Diagnostic Survey; the third part was drawn from the Job Descriptive Index; and the last part concerned managers' demographic factors.

Statistical methods used to analyze the data included Cronbach's alpha coefficient to determine reliability of the instrument, and factor analysis to identify the dimensions of organizational climate. Pearson's product-moment correlation, multiple regression, and the subgroup method were used to determine the relationship between job characteristics and job satisfaction, and the moderating effects of organizational climate on that relationship. Chi-square and z scores were used to test the significance of the results.

Examination of the data revealed that the relationship between job context factors (such as relationships with co-workers and treatment by supervisors) and job satisfaction was stronger than the relationship between job characteristics (such as job autonomy and task significance) and job satisfaction. The job characteristics-job satisfaction relationship was significantly moderated by organizational climate. This relationship was weak for the group with a favorable climate, but it was notably strong for the group with an unfavorable climate. Also,

the relationship was significantly moderated by the effects of the interaction between organizational climate and individual need for personal growth (NPG). Thus, the relationship was particularly strong for the high-NPG managers with an unfavorable climate, but significantly weak for the high-NPG managers with a favorable climate.

These findings suggest that the job characteristics-job satisfaction relationship cannot be comprehensively understood without reference to organizational climate, and that job enrichment intervention is appropriate when the high-NPG managers are dissatisfied with their working environment. Finally, to improve the quality of the state managers' work life, programs to enhance the relationships among co-workers and between co-workers and supervisors are recommended.

DEDICATION

This dissertation is dedicated to Dr. and Mrs. James K. Sours and Dr. Choong-Sik Chang, who literally made it possible for me to pursue my graduate education in America.

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CHAPTER I

INTRODUCTION

As society has turned increasingly to government for the provision of services, governmental jurisdictions have grown rapidly and have become the main providers of public and social services. As a consequence, public employees have become significant actors in modern society; the motivation, morale, and performance of public sector employees clearly constitute an important contemporary social concern. However, in comparison to the private sector, there is considerable evidence which suggests that public sector employees have less job satisfaction, motivation, and commitment to their work.

For example, in a study comparing the five major need categories put forth by Maslow (physical, safety, love, self-esteem, and self-actualization), Paine Et al. (1966) found that government middle managers reported considerably less satisfaction than similar managers from the private sector. Buchanan (1974) compared questionnaire responses from 279 managers in three industrial and five federal agencies on measures of job satisfaction and organizational commitment. He found the industrial sample reporting greater satisfaction and greater commitment. More recently, similar kinds of results have been reported from other countries. Cacioppe and Mock (1984) studied the quality of work experience in public and private organizations in Australia, and they found that government employees rated the quality of their work experience significantly below the level reported by their

private sector counterparts. And Solomon (1986) reported, from the study of perception and satisfaction of 240 managers from a variety of private and public organizations in Israel, that private sector managers were significantly higher in their satisfaction with the job and organizational climate than were public sector managers.

Because of the necessity for maintaining the visibility of public agencies and for improving the quality of their services, the discrepancy between the feelings and perceptions of business and government leaders is of real concern. Many studies have tried to identify the causes of job dissatisfaction, low levels of motivation, and weak commitment of public employees (Perry and Porter 1982, Buchanan 1974, Cacioppe and Mock 1984). The general consensus among these researchers has been that the working environment of the public sector, both internal and external to organizations, is much more complicated, complex, and ambiguous than that of the private sector.

Buchanan's study (1974) on organizational commitment of public sector managers provided specific reasons for their weak commitment to the organization. According to his study, public sector managers cannot see and feel the linkage between their effort and organizational successes because their work cannot be clearly measured and evaluated. Moreover, the missions and policies of the public sector agencies are subject to change from election to election. And public agencies have to pursue multiple goals that are often in conflict with one another. In addition, because representativeness in the form of equal opportunity shapes government hiring practices, their work groups tend to be more heterogeneous. These explanations are directly related to work setting.

Perry and Porter (1982) and Cacioppe and Mock (1984) agreed with Buchanan's explanation -- that is, work environment characteristics and organizational climate are the main causes of dissatisfaction, low levels of motivation, and weak job involvement in the public sector.

In addition, there is another area of general consensus in the related literature -- that is, public sector employees tend to be more motivated by factors intrinsic to the work itself (job characteristics such as achievement, recognition, responsibility, and growth) than by extrinsic factors such as pay, status, and job security (Cacioppe and Mock 1984; Rawls, Ulrich, and Nelson 1975). However, public employees also express low satisfaction with the intrinsic aspects of their work. For example, Newstrom, Reif, and Monczka (1976) showed, in their study of the differences between private and public sector employees, that the latter had a large and unsatisfied demand for opportunities to find fulfillment in their work. They also found these same public employees to be less concerned about job security and economic rewards than were their private sector counterparts. These findings are consistent with Rainey's study (1982) of reward preference among public and private managers. He found that public managers tended to place higher value on public service, their work, and helpfulness to others, and significantly lower value on high pay, status, and prestige.

This suggests the importance of further investigation to better understand the work environment of public organizations, as well as their job characteristics, in order to promote a better quality of work life and a higher level of motivation. So far, many studies have been done to determine the relationship between job characteristics and job

satisfaction (Herzberg 1966; Hackman and Oldham 1976), and the relationship between organizational climate and job attitude and behavior (Litwin and Stringer 1968). In particular, the job characteristics-job satisfaction relationship has been widely researched as a part of the efforts at work redesign and job enrichment to increase employee motivation and job satisfaction. Many studies have concluded that employees should be willing to challenge themselves and to assume responsibility for self-development if they hope to realize increased job satisfaction through job enrichment. In other words, an individual's need for growth is an important moderator of the job characteristics-job satisfaction relationship. Moreover, the possible effects of organizational characteristics on this relationship have also been indicated in a number of research projects. Yet, few systematic investigations have been undertaken to assess the impact of organizational climate on the relationship between job characteristics and job satisfaction and motivation. Because the variables of organizational climate and job characteristics have been determined to be sources of influence on the attainment of job satisfaction and motivation in public employment, it is essential that we have a better understanding of the impact that organizational climate has on the job characteristics-job satisfaction relationship. Such an increase in understanding may assist researchers and managers in making improvements in the working conditions within the public sector.

PURPOSE OF THE STUDY

The main purpose of this study was to undertake further empirical investigation of the relationship between job characteristics and job satisfaction and the impacts of organizational climate on that relationship in public organizations. managers in Oregon State Government were the population studied. More specifically, first this study examined the managers' job characteristics, their job context factors (such as pay, co-worker relationships, supervision, and rewards), their perceptions of organizational climate, their strength of need for personal growth, and their affective reactions to their jobs. Second, this study determined the relationship between job characteristics and job satisfaction for the managers. Third, the study investigated the impacts of the variables -- managers' needs for personal growth, organizational climate, and the interactive effects between the climate and their needs for personal growth -- on the job characteristics-job satisfaction relationship. The following research questions guided the study to achieve this purpose.

1. What are the relationships between job characteristics (intrinsic factors) and job satisfaction and between job context (extrinsic factors) and job satisfaction of state managers?
2. Is there a relationship between job satisfaction and demographic variables of state managers?
3. What are the impacts of strength of need for individual growth on the job characteristics-job satisfaction relationship?
4. What are the impacts of organizational climate on the relationship between job satisfaction and job characteristics?

5. Are there any effects of the interaction between organizational climate and individual differences? If so, what is the impact of the interaction on the relationship between job characteristics and job satisfaction?

SIGNIFICANCE OF THE STUDY

The history of government is replete with reform efforts. For improving the efficiency and effectiveness of government, various management techniques have been utilized, such as centralization, decentralization, PPBS, ZBB, MBO, computerization, management science, and operations research. However, their overall impact has been modest. Recently Downs and Larkey (1986) argued that the "hubris" approach to reform has been gradually replaced with "ideology of helplessness" in the public sector. In other words, the reform attempts using scientific management theories and methods have not been very successful in improving the public sector management; therefore, the approach of reducing the size and influence of government has become dominant in recent years. Meanwhile, during approximately the same period of time, many books such as *In Search of Excellence* have advocated a new way of managing organizations. Their main message has been "productivity through people." The authors have argued that the traditional management approach has made lives in organizations unnecessarily complicated and has prevented utilizing the unlimited human potential by emphasizing structuring the process of human interactions and controlling the members. The authors have observed that human beings are capable of growing and developing themselves and that people are

waiting for motivation to do meaningful work for their organizations and society. Therefore, managers should help their subordinates to develop themselves and should facilitate their subordinates' creativity in performing their jobs in the organization.

The demand for government services has never decreased. Urbanization, the aging population, and income growth require the expanded role of government in our society. The public is asking for a higher quality in education, public safety, and welfare programs. A new strategy is required for managing public organizations to increase their effectiveness, efficiency, and responsiveness rather than reducing their role in society. The new approach of management suggests that we can achieve these goals by facilitating and nurturing people's creativity and abilities in public organizations. As a consequence, the role of public sector managers has become critical, because they are responsible for the job performance of their subordinates and they are in a position to activate human creativity and energy and to improve the methods of managing public organizations in order to create efficient and effective public services. Buchanan (1974) indicated the importance of managers in an organization as follows:

First among the forces which give life to organizations are human energy and creativity. These are important at all hierarchical levels, but nowhere more so than among the decision-making elite: the organization's managers (p. 339).

The importance and complexity of the managerial job require that we learn as much as possible about it.

By answering the above research questions, we can help Oregon State Government managers to identify the determinants of positive attitudes toward their jobs so that they can perform their critical role

effectively in their organizations. This study can help the managers to increase their understanding of their job characteristics and the quality of their work environment. Also, the study can identify the areas of the managers' special needs for improved performance in their jobs. Lastly, improved understanding of the quality of work life of the managers can be achieved, and possible methods for improving it can be found.

This study can benefit State Government in several ways. Information from the study can help State Government to improve procedures for designing and providing in-service and management development programs. Also, this study can help to increase understanding of factors which satisfy managers and thus assist the State Government in directing its resources to support managers. Finally, this study can provide some guidelines that could be useful for those involved in recommending or implementing the design for positive changes in personnel policy for the managers in State Government.

To address the theoretical concerns, this study can fill some of the gaps in explaining the relationship between job characteristics and job satisfaction in relation to the organizational behavior theory. This study can provide empirical evidence of the impact of organizational climate on the relationship -- which little other research has done so far. Moreover, this investigation of the job characteristics and organizational climate of public sector managers will help to improve understanding of some of the causes of the low level of satisfaction and motivation in the public sector.

DEFINITIONS OF TERMS

Below is a list of terms frequently used in this study, with a definition and clarification for each:

Job satisfaction: general positive or negative attitudes and feelings resulting from the appraisal of one's overall job experience.

Motivation: the degree to which an individual wants and chooses to engage in certain specified behavior.

State managers: managers at and above the level of supervisor in all of the state agencies and the judicial branch (executives and political appointees are included, but elected officials and the legislative branch are excluded).

Organizational climate: shared perceptions regarding organizational characteristics and processes by members of a work group or organization. That is, organizational characteristics and processes are perceived, selected, and interpreted by an organization's members; then the perceptions are transformed into psychologically meaningful descriptions such as pressure, warmth, and support.

Job characteristics: attributes which are directly related to, or are inherent in, a manager's work itself and in doing the job. They are factors intrinsic to the job itself which give a manager feelings of achievement, responsibility, and meaningfulness (e.g., task significance, task identity, skill variety, autonomy and feedback).

Job context factors: those factors which are related to conditions surrounding the performance of a job but not to the job itself -- that is, external dimensions of the job such as pay, co-worker relationships,

supervision, and promotion. These are the extrinsic factors identified by Herzberg (1959) as related to hygiene factors.

Need for personal growth (NPG): personal desire for the satisfaction of "high order" needs (e.g., obtaining feelings of accomplishment). People who are high in their need for growth have strong desires for personal accomplishment, for learning, and for developing themselves beyond where they are now.

Demographic factors: in this study, this term refers to the characteristics of age, sex, marital status, number of dependents, level of education, current position, years in current position, and years in current agency.

CHAPTER II

CONCEPTUAL FRAMEWORK AND RELATED VARIABLES

This chapter begins by providing a conceptual model for the study; this model represents hypothetical relationships among the sets of variables. It is followed by a discussion of which kinds of variables are included in each set and why they are included. Also, based on a review of related literature, the relationship of the sets of variables is discussed.

A CONCEPTUAL MODEL FOR THE STUDY

In order to organize our thoughts and to examine the relationships between the sets of variables, it is necessary to develop a model. Job satisfaction and motivation are complicated variables and are part of a process in which multiple factors are interrelated. The model should take into account these factors. Also, it should be able to integrate and represent the systematic interrelationships among the variables in a system. Considering these factors, the following model includes at least three sets of variables which constitute the work situation. First, the organizational environment, including organizational climate, is considered. Second, some attention is directed to the job characteristics and job context factors. Third, individual differences are shown. (See Figure 1.)

ORGANIZATIONAL ENVIRONMENT

J.D. Thompson (1969) argued that "the primary administrative function is matching the internal organizational structure with the demands of the task environment." This argument suggests that the characteristics of a particular organization emerge while the organization tries to cope with the external environmental demands and characteristics. This idea has been proved with several empirical studies (Lawrence and Lorsch 1967; Salancik and Pfeffer 1978). In relation to the public organization, Rainey et al. (1978) suggested three critical external factors that can have significant impact on the structure and process of a public sector organization: "market exposure," "legal and formal constraints," and "political influences." The model indicates the three factors as the organizational context of the public sector and shows their influences on the characteristics of public organizations.

Meanwhile, a great deal of literature on organizational behavior has provided theories and evidence which explain the relationship between organizational characteristics and employees' attitudes and behavior. Actually, the entire discussion which dealt with the pathology of bureaucracy indicated how the bureaucratic structure and process might influence individual behavior in organizations (Merton 1957, Gouldner 1954, March and Simon 1958). However, Herman and Hulin (1972) argued that the relationship was rather complex and that the explanation of the relationship by classical organizational theorists were not enough. Many researchers in organizational behavior agreed

FIGURE 1. A Conceptual Model for the Relationships of Job Factors, Organizational Climate, Demographic Factors, and Job Satisfaction

with Herman's and Hulin's comments and argued that there was another set of variables which influenced the relationship Porter and Lowler 1965, Indik 1968, James and Jones 1976). The third set of variables which connected the organizational characteristics to individual behavior and attitudes was organizational climate (James and Jones 1976, Litwin and Stringer 1968; Field and Abelson 1982). The construct of organizational climate was the area which we were interested in and investigated in terms of the organizational environment in this study.

Organizational climate refers to a set of work environment attributes which can be perceived by the members of the organization. The attributes may be induced from the way the organization deals with its members and its environment or from the interaction between the members. So, the model shows that the organizational characteristics and processes, such as centralization, standardization, and managerial behavior are the determinants of organizational climate (Field and Abelson 1982). We have a tendency to ascribe human-like qualities to our work environment attributes; therefore, the sets of perceptual attributes which the members of the organization refer to in terms of human-like values (such as warmth, pressure, and supportiveness), are the dimensions which make up the climate.

Much of the research on climate has reported its significant impact on employees' attitudes and behavior. Litwin and Stringer (1968) studied three simulated business organizations. Each organization had a climate which aroused the individual's need for power, affiliation, or achievement. The result showed that the organization with the "achievement climate" was significantly more productive and innovative

than the organization with the "power and affiliation climate." In a study of private firms, Pritchard and Karasick (1973) found that organizational climate was a valid predictor of a firm's (but not individual's) success. There have been a number of other studies that have found an influence of climate on performance, motivation, and job satisfaction (Lawler et al. 1974; Litwin and Stringer 1968; Shnelder and Snyder 1975).

The above discussion indicates that organizational climate is an important concept for understanding the behavior and attitudes of employees in organizations. Another important role of the concept is the fact that it allows us to measure and analyze the quality of the work environment for the prediction, planning, and evaluation of organizational change effort. It is also useful for characterizing various environments for cross-environmental comparisons (Litwin and Stringer 1968).

However, there are two methodological issues relating to the measurement of climate. One is the level of the unit of analysis, and the other is the multi-dimensional nature of climate. Literature on organizational climate initially focused on studying organizational attributes; thus, the organization was considered the natural unit of analysis (Argyris 1958, Litwin and Stringer 1968). But as a researchers have expanded their studies, they have discovered other aspects of climate.

For example, according to James and Jones (1974), most of the research on organizational climate was done through interviews or questionnaires to determine the pattern of members' perceptions of their

organization climate. Therefore, two different factors could have an impact on forming a member's perception of the organizational climate. One was organizational characteristics, events, and processes; and the other was each individual's perception or psychological situation. James and Jones argued that, if the researchers focused on organizational attributes to investigate organizational climate, the unit of analysis should be the organization; and if they focused on individual attributes, the unit of analysis should be the individual and what they called "psychological climate," indicating that each individual's psychological climate could be different within the same organization. Also, Hellriegel and Slocum (1974) argued that a group or subsystem might perceive its environment differently, so multiple group climates could exist in an organization.

Recently Glick (1985) concluded that "acknowledging multiple units of theory and analysis in climate research is clearly appropriate. At a minimum, individuals, subunits and organizational units of theory and analysis should be recognized (p.603P)." This study attempted to investigate the way that state managers make sense of their work environment. More specifically, we were interested in the way they perceive, select, and interpret their working environment and give meaning to it, and how their perceptions and interpretations of their environment affect job behavior and attitudes on their jobs. Thus, the basic unit of observation in the study was individual managers.

The next factor that we were concerned with was the conceptual boundary of the working environment. The working environment can be any of several organizational units; it can be the work group, the depart-

ment, the agency, or the state government as a whole. Howe (1977), Schneider, and Reichers (1983) advised that, in research about climate, questions should focus on specific organizational units with recognized boundaries. What this study was interested in was the managers' perceptions, not of their departments nor their work groups, but of the agencies which they belong to and work for. According to the Labor and Human Resource Division in the Executive Department, Oregon State Government consists of 87 agencies. This study focused on the managers' perceptions of their own agencies (such as Children's Services Division, State Police, Highway Division, and State Universities). In the study, managers were asked to think in terms of their agencies in responding to the questions related to organizational climate.

Regardless of the level of the unit we may focus on, the concept of climate implies so many dimensions that it is difficult to use it properly to understand the individual behavior in an organization (Guion 1973). Studying the multidimensional nature of climate may allow us to encompass numerous psychological dimensions; however, it contributes to the general vagueness of the concept. As a way to avoid the multidimensional problem, Schneider and Reichers (1983) suggested that the researchers be clear conceptually about the kind or kinds of climates that they wish to assess before they begin their study, and that they focus on the selected climates, because work settings have different climates for specific areas, such as safety, service, production, security, and quality. For example, Zohar (1980) used this approach and studied a specific climate: the climate for safety. In

this study, we examined primarily the climate which was related to job satisfaction and motivation.

There have been a number of studies reporting attempts to define and measure these aspects of climate. Some of the studies recognized that four common dimensions are apparent in the climate related to job motivation and satisfaction: autonomy/control, degree of structure, rewards and consideration, warmth and support (Campbell et al. 1970, Waters et al. 1974, Field and Abelson 1982). However, other studies revealed quite different dimensions of climate (Meyer 1968, Downey, Hellriegel, Phelps, and Slocum 1974; and Sims and LaFollette 1975). Regarding the dimensions of climate, Muchinsky (1976) argued that different samples or populations could have different dimensions of climate because of members' different perceptions, and he suggested doing a factor analysis to determine the dimensions of climate for the population to be studied. This study followed Muchinsky's suggestion by conducting a factor analysis to determine the dimensions of organizational climate.

JOB-RELATED FACTORS

An organization consists of related jobs. The members of the organization are employed to perform these jobs based on having the skills, knowledge, and experiences required to achieve the organizational goals. However, we cannot see or feel what the job is like; rather, it is "a complex interrelationship of tasks, roles, responsibilities, interactions, incentives, and rewards" (Locke 1976, p. 130). Thus, in order to understand employees' attitudes and behavior on

their jobs, it is necessary to analyze and categorize the complex interrelationships in terms of their constituent factors. According to the researchers' concerns and interests, the factors can vary and can be categorized differently. One factor can be simply the work itself, or there can be many different factors such as pay, working conditions, relationships with co-workers, and management policies. One of the typical job dimensions which many researchers have used in recent job satisfaction research is one using the nine dimensions that Lock (1976) identified: work, pay, promotion, recognition, benefits, working conditions, supervision, co-workers, the company, and management (Locke 1976, p.132).

These dimensions may be adequate for some purposes; however, the classification includes several different levels without distinction, such as the company, the external job factors (e.g., pay and co-workers), and the work itself. For this study, the factors were categorized into broader dimensions focusing exclusively on the level of jobs in organizations. Since Herzberg, Mausner, and Snyderman (1959) classified a job into the two broad categories of "job content" and "job context" through the study of "critical incidents," most researchers have divided jobs into these two broad categories. The contexts of a job are the factors which are related to its external elements, such as pay, company policies, and relationships with co-workers. The job content indicates exclusively the work itself -- that is, the job characteristics. Following this line of classification of job factors, this study examined the context factors and the characteristics of the

state managers' jobs separately, as the model shows. In the following section, each category is discussed in more detail.

Job Context Factors (Extrinsic Factors)

Herzberg defined the surrounding or peripheral aspects of the job as job context factors or dissatisfiers, arguing that the surroundings of the job only contribute to diminishing the dissatisfaction of the employees but that they are not the "motivators." The main elements of job context that this study investigated were the factors that were directly related to the managers' jobs, such as pay, co-workers, supervision, and working conditions. Of course, organizational structure and management policy are related to the managers' jobs and their reactions to their jobs. But these macro-level dimensions of job contexts are dealt with in the section on organizational factors.

To develop a questionnaire for investigation of job-related attitudes and to identify the important factors in relation to these attitudes, Smith, Kendal, and Hulin (1969) extensively reviewed the literature on job satisfaction; they identified the pattern of the job factors which is most consistently used in the literature, and they explained this pattern as follows:

If one takes into account the different terms used by different investigators to describe the same or very similar factors . . . and the fact that many of the inventories which have been factored were originally designed with a specific population in mind, then it appears to us that the factor analytic studies which have been performed on various job satisfaction inventories have yielded a very consistent pattern of factors. The factors which seem to emerge most consistently are a general factor, a pay and material-reward factor, a factor dealing with the work itself, a supervisor factor, and a factor related to the other workers on the job (Smith et al. 1969, p. 30).

This statement indicates two distinctive types of job factors in investigation of job-related attitudes. One is the work itself (job characteristics such as achievement, recognition, and growth), and the other is the external factors of the work such as supervision relationships to co-workers, and pay and material reward. In further investigation, they found that the pay and material-reward factor could be broken down into two separate subfactors: pay and promotion. Other studies also identified these job external factors as the important job context factors. (Weiss et al, 1967, Locke 1976). As a consequence, we used the factors of pay, promotion, supervision, and co-workers as the variables to measure the job context of the state managers' jobs.

Job Characteristics (Intrinsic Factors)

The underlying theory relevant to intrinsic factors of a job also was Herzberg's two-factor theory of satisfaction and motivation (Herzberg et al. 1959, Herzberg 1966). This theory proposed that the primary determinants of employee satisfaction were the factors which were related to the work itself, such as recognition, achievement, responsibility, advancement, and personal growth. These factors were called "motivators" or satisfiers," and the theory specified that a job enhances job motivation and satisfaction only to the degree that the "motivators" were designed into the work itself. This theory provided the basis of the empirical research on the job characteristics; unfortunately, however, the theory failed to show how the presence or absence of the motivation factors could be measured for existing jobs.

The problem of measuring job characteristics was carefully dealt with by Turner and Lawrence (1965). On the basis of a review of

existing literature and a priori conceptual framework, these authors developed operationalized measures of six "requisite task attributes", which were predicted to be positively related to worker satisfaction and attendance. The six attributes were (1) skill variety, (2) autonomy, (3) required interaction, (4) optional interaction, (5) knowledge and skill required, and (6) responsibility. However, they found that the jobs which included these attributes did not provide job satisfaction and motivation to all employees. According to the individuals' cultural backgrounds, their responses to their jobs were different. The study concluded that the outcome of a job resulted from the interaction between the job characteristics and the employees' differences.

The interaction process between job and employees as examined more carefully by Hackman and Lawler (1971). First, they tried to conceptualize the individual differences into more specific terms so that they could be measured empirically. From their study, they found that employees who scored high in their strength of need for growth responded more positively to the jobs which had motivation potential attributes than did the employees who scored low in their strength of need for growth. Also, they found that when the individuals responded to their jobs positively they experienced a certain psychological state, which encompassed "meaningfulness to work," "experienced responsibility for outcomes of the work," and "knowledge of the actual results of the work activities." Hackman and Lawler argued that these were the "critical psychological states" which a job had to activate to bring about job satisfaction and motivation. Also, they found that Turner and Lawrence's (1965) measures of job characteristics were useful in

assessing the characteristics which promote the critical psychological state. As an example, the autonomy dimension provides workers with a feeling of personal responsibility. When a job allows an employee to use his or her valued skills and abilities and to do an entire piece of work from beginning to end, the employee experiences meaningfulness of work. When the employee receives feedback about the work performed, he or she then acquires knowledge of the actual results of the job.

On the basis of these works by Turner and Lawrence (1965) and by Hackman and Lawler (1971), Hackman and Oldham (1980) formed a model which showed the relationships among the core job characteristics, critical psychological states, and work outcomes such as job satisfaction and motivation.

As we can see from the model, five core job characteristics were suggested as the factors which fostered the emergence of the psychological state.

Experienced meaningfulness. Three job characteristics combine to determine the psychological meaningfulness of a job. They are skill variety, task identity, and task significance. In other words, when a task requires a person to engage in activities that challenge or stretch his or her skills and abilities, that task can be experienced as meaningful by the individual.

Experienced responsibility. As mentioned above, to the extent that a job has high autonomy, the job requires the individual's own effort, initiative, and decisions. In such circumstances, the individual should feel a strong personal responsibility for the successes and failures that occur on the job.

Figure 2. A theoretical model relating the core job dimensions, the critical psychological states, and the job outcomes. Source: Hackman and Oldham 1980, p. 90.

Knowledge of results. When a job provides the individual with direct and clear information about the effectiveness of his or her performance, he or she will have a sense of direction and a feeling of achievement. Thus, knowledge of the results of one's job is affected by the amount of feedback the individual receives from doing the work (Hackman and Oldham 1976, pp. 257-8).

These five characteristics are currently the most widely used to measure jobs in order to diagnose the need for job redesign in an organization. According to Hackman and Oldham (1976), when the five core characteristics of a job are combined, it is possible to generate a summary score which shows the overall "motivating potential" of a job.

The score is computed as follows:

$$\text{Motivating Potential Score (MPS)} = \frac{\text{Skill Variety} + \text{Task Identity} + \text{Task Significance}}{3} \times \text{Autonomy} \times \text{Feedback}$$

This study examined these five characteristics of state managers' jobs to examine the intrinsic factors, and MSP was used to evaluate the motivational potential of managers' jobs in state government.

INDIVIDUAL DIFFERENCES

Considerable research (for example, Vroom 1964) has demonstrated that individual differences can account for a great deal of the variance in behavior and attitudes on jobs. When individuals join an organization, they bring different attitudes, abilities, needs, and beliefs to the work situations. Thus, when we examine the factors which are related to job satisfaction and motivation, we must ask how large an impact is created by the variation among the employees themselves.

According to the interests of researchers, different categories of individual characteristics can be examined. Among the factors that we examined were the demographic factors and their impacts on the job satisfaction of the managers. Seashore and Taber (1975) argued that "it is essential to take them into account for they are the basis for much non-random clustering of like people in like job and job environment" (353). This study investigated gender, race, age, education, marital status, number of dependents, current position, and years in current position as basic information about an individual. In addition to the basic demographic factors, the managers' need for personal growth (NPG)

was assessed, because it has been identified as one of the most important moderating variables in the job characteristics-satisfaction relationship, as we discussed earlier (Hackman and Oldham 1975; Hackman and Lawler 1971, Loher, Noe, Moeller, and Fitzgerald 1985).

JOB SATISFACTION

Job satisfaction was the dependent variable which was tested against other variables that we have previously discussed. The concept of job satisfaction is a many-faceted one. Some researchers see it as employees' affective reactions to various factors of the work situation, such as pay, the work itself, and supervision (Vroom 1964, Smith et al. 1969; Locke 1976). Some have gone further to try to tap the more basic dimensions of employees' responses about their levels of satisfaction of various psychological needs (psychological safety, social needs, ego, and self-actualization) (Maslow 1954).

Since job satisfaction was the only outcome variable in this study, we were especially interested in the managers' "overall satisfaction" with their work situations. This term refers to the generalized affective reactions to all aspects of their work.

CHAPTER III

RELATED LITERATURE, THE RELATIONSHIP BETWEEN THE SETS OF VARIABLES, AND POSSIBLE HYPOTHESES

So far, we have discussed the important sets of variables related to job satisfaction and motivation. We have mainly discussed what the sets of variables are and why they are important in this study, and what kinds of variables are included in each set and why. In the following discussion, we will examine the relationships between the sets of variables, on the basis of related literature and theories. In addition, the hypotheses that guided the research will be specified.

Since this study attempted to examine the job characteristics-job satisfaction relationship and the impacts of other variables on the relationship, it is logical to examine the job characteristics-job satisfaction relationship first. Then, in the following sections, we will determine how the relationship can be influenced by other variables.

In order to determine the influence of other variables on the relationship, first the impact of individual differences (demographic factors and the need for personal growth) on the job characteristics-job satisfaction relationship will be discussed. Next, the way organizational climate can moderate the relationship will be determined. Finally, the effects of the interaction between climate and the need for personal growth on the relationship will be examined.

THE RELATIONSHIP BETWEEN JOB CHARACTERISTICS AND JOB SATISFACTION

As we discussed above, job factors are divided into the following two broad areas: job characteristics (intrinsic) and job context (extrinsic). According to the empirical research, managers place higher values on the intrinsic rewards than on the extrinsic rewards. Also, they identify intrinsic factors (job characteristics) as the major sources of their job motivation and satisfaction. For example, Porter and Lawler (1968) surveyed 635 managers about their perceptions of the relationship between performance and attitude, to determine which factors were important contributors to a positive attitude; they reported as follows:

Performance differences were more likely to be related to attitudes concerned with such things as opportunity for personal growth and development, and opportunity for independent thought and action, than to attitudes concerned with the opportunity to form close friendships or the feeling of security one gets from his job (p.149).

This research showed that higher job satisfaction among managers was more likely to be produced by job characteristics (intrinsic factors) than by job context (extrinsic factors).

Also, a recent study by Couger (1988) of job satisfiers for managers reported similar results. He surveyed 1,800 persons about their job satisfiers, including managers, programmers, and analysts from both government and industry. He reported that managers ranked the work itself first and opportunities for achievement second as the important satisfiers among 11 factors such as job security, working conditions, pay, and benefits. Also, we already discussed that, in a comparison

between the public sector and the private sector, there is a general consensus that public sector managers tend to be motivated by, and to obtain satisfaction from, their job characteristics (intrinsic factors).

On the basis of these studies, we could induce the following hypothesis:

Hypothesis I. The relationship between job context factors and job satisfaction is weaker than the relationship between job characteristics and job satisfaction.

The diagram on the model (Figure 1,) shows the hypothetical relationship. The wavy line from job context factors to job satisfaction shows the weak relationship, and the straight line from job characteristics to job satisfaction shows the strong relationship, as in Porter and Lawler's model (1968, p.165).

THE EFFECTS OF INDIVIDUAL DIFFERENCES ON THE JOB CHARACTERISTICS-JOB SATISFACTION RELATIONSHIP

There is a vast amount of literature dealing with relationships between individual demographic factors and job satisfaction. Most of research supports the hypothesis that demographic differences are associated with job satisfaction. Surprisingly, however, the evidence is inconsistent. For example, Dewar and Werbel (1979) reported that older workers are more satisfied with their work than are the younger workers, but Bergmann (1981) failed to find an association between age and satisfaction. McNeely (1984) reported that females tend to be more intrinsically satisfied than males, but Fry and Greenfield (1980) failed to find gender-satisfaction relationships. Klein and Maher (1966) reported a negative relationship between education and satisfaction;

they interpreted this relationship to mean that more education might create higher expectations, so that job satisfaction might be lower. But Brush, Moch, and Poyan (1987) reported that they could not identify any pattern of significant correlation between job satisfaction and education. In terms of other factors such as job tenure and race, conflicting results were reported (Gruneberg 1979).

Brush et al. (1987) suggested that the reason for the inconsistent evidence might be the interactive effects between demographic variables and other variables such as organizational style and process. Since the research failed to identify a particular pattern in the relationship between job satisfaction and demographic variables, the model in this study could not predict any kind of pattern in the relationship between demographic variables and job satisfaction among the state managers. This study expected that different relationships would appear because of the interaction between organizational characteristics and demographic factors. Thus, we could hypothesize as follows:

Hypothesis II. There is no relationship between the state managers' job satisfaction and their age, gender, race, education, current position and years in current position.

Even if the demographic differences do not show any pattern in relation to job satisfaction and motivation, the individual differences which are operationalized in terms of work values or need for growth appear to have a significant impact on individuals' reactions to job characteristics, as we already mentioned.

Wanour (1974) tested three individual difference measures which had been investigated as moderators of the job characteristics-satisfaction

relationship. The three variables were: urban versus rural background, the Protestant work ethic, and a higher order need strength. The job characteristics-satisfaction relationship was strongly influenced by a higher order need strength, less strongly influenced by the Protestant work ethic, and only weakly moderated by urban versus rural background. Oldham (1976) discovered a positive relationship between job characteristics and employee motivational responses for a group of clerical workers. Individual strength of need for growth moderated this relationship, so persons with high scores in their need for growth responded most favorably to the expanded jobs.

More recently, Loher et al. (1985) investigated the job characteristics-job satisfaction relationship and the need for personal growth as a possible moderator of the relationship through meta-analysis procedures. They found that the correlation between the job characteristics index and job satisfaction was about .39. However, they found that the correlation between job characteristics and satisfaction was .65 for persons who scored high on need for growth and about .38 for persons who scored low on need for growth. They concluded that there was clear statistical evidence that the need for growth acted as a moderator of the relationship between job characteristics and job satisfaction. On the basis of this research evidence, we could hypothesize as follows:

Hypothesis III. The relationship between job characteristics and job satisfaction would be greater for the subgroup of managers who score high on the need for personal growth than for the subgroup of managers who score low on the need for personal growth.

THE EFFECTS OF ORGANIZATIONAL CLIMATE ON THE JOB CHARACTERISTICS-JOB SATISFACTION RELATIONSHIP

Earlier in the discussion of organizational climate, we reviewed the empirical evidence of the significant relationship between organizational climate and job satisfaction (Lawler et al. 1974; and Pritchard and Karasick 1973), and the fact that very little research had been done in the area of the organizational climate as a moderator in the relationship between job characteristics and job satisfaction.

On the other hand, several researchers have suggested the possibility that the job characteristics-satisfaction relationship would be moderated by variables other than individual characteristics. Wild and Kempner (1972) found that workers from urban-type communities were more inclined to accept "rationalized and paced" work than were those from rural areas; the data also showed that this relationship was moderated by the organizational characteristic "within plant size."

Dunham (1977) studied a significant multi-variable relationship between job characteristic measures and job satisfaction measures for a group of 784 executives from a large merchandising organization. He found that a "functional specialty group" within the organization had a strong and significant moderating effect. The strongest moderating effect occurred when the study focused on satisfaction with the kind of work. However, he concluded that even if the kind of work had the potential for motivation and satisfaction, the employee might react to the kind of work differently according to the work environment. In other words, environmental factors could affect the impact of job characteristics on the employee. Oldham (1976) showed that the

relationship between job characteristics and internal motivation was moderated by workers' satisfaction with supervisors and co-workers, and he further suggested that the moderating effect of other attributes of the work environment (such as organizational climate, organizational structure, and pay system) have to be examined.

Finally, recently Loher et al. (1985), in their research on the job characteristics-satisfaction relationship, concluded that:

If the work group is supportive of enriched work, this may help to enhance the employee's satisfaction with a more complex job. Future research is necessary to investigate the hypothesis about moderating situational characteristics for the low-growth need strength person (p. 288).

The above literature review provides enough evidence of the possible moderating effects of the working environment, especially organizational climate, on the job characteristics-satisfaction relationship.

Earlier we reported that organizational climate, related to job satisfaction and motivation, could have different dimensions according to samples and populations. To determine the moderating impact of organizational climate on the job characteristics-satisfaction relationship, the following general hypothesis could be drawn:

Hypothesis IV. There is no statistically significant moderating effect of the dimensions of organizational climate on the job characteristics-job satisfaction relationship.

INTERACTIVE EFFECTS OF ORGANIZATIONAL CLIMATE AND THE NEED
FOR PERSONAL GROWTH ON THE JOB CHARACTERISTICS-
JOB SATISFACTION RELATIONSHIP

So far, we have discussed the possible impact of individual differences and organizational climate on the job characteristics-job satisfaction relationship. Lastly, this study examined the interactive effects between organizational climate and the need for personal growth on the relationship.

The behavior and attitude of individuals in an organization are influenced greatly by the work setting. A classic organizational theorist, Kurt Lewin, proposed a model of human behavior which took into account both individual differences (P) and environment (E). In brief, he presented the idea that human behavior (B) was a function of the interaction between P and E. This hypothesis has traditionally been abbreviated $B=f(P.E)$. Several other management researchers, such as Likert, Vroom, and Katz and Khan, have attempted to develop more complex models based on interaction between environment and personal differences. In relation to job motivation, Atkinsons described the function of the environment as follows:

Certain characteristics of the situation arouse or trigger different motives, opening different valves or general outlets. Each motive or engaging outlet is responsive to a different set of situational characteristics (from Litwin and Stringer 1968, pp. 10-11).

Litwin and Stringer (1968) argued that organizational climate aroused or suppressed particular needs of individuals in an organization. In other words, according to organizational climate, different kinds of needs of individuals could be aroused. This argument

has been proved with different empirical research, as this study discussed earlier. More recently, Naylor, Pritchard and Ilgen (1980) categorized individual differences into two types: relatively permanent characteristics (aptitudes, personality, and basic needs) and more changeable characteristics (ability and temporary need state). They argued that personality and basic needs are relatively stable and change slowly over time. However, ability and temporary need states are highly changeable. Specifically, they indicated that "the need state can be altered as a function of the situation and the rewards received" (p. 33). These arguments suggest the possibility of change in the state of need for personal growth depending on organizational climate. Accordingly, we can postulate that the interaction between organizational climate and individual differences alters the state of need for personal growth, and then in turn the state of need for growth moderates the relationship between job characteristics and satisfaction.

We have already suggested a hypothesis (Hypothesis III) to examine the moderating impact of individual strength of need for growth on the relationship. Thus, in this section we need only to draw a hypothesis which indicates the presence of the interactive effect between individual strength of need for growth and organizational climate. With empirical evidence, Litwin and Stinger (1968) report that the autonomy dimension and the reward dimension of climate were positively related to achievement need, that the structure dimension was negatively associated with achievement need, and that the consideration dimension was not related to the individual achievement need in organizations. As a

consequence, the presence of the interactive effect between the two variables could be hypothesized as follows:

Hypothesis V. There is no significant statistical difference between the correlation coefficients for the job characteristics-job satisfaction relationship resulting from the interaction between each dimension of organizational climate and the need for personal growth.

CHAPTER IV

METHODOLOGY

This section discusses how and where to collect data and how to analyze the data. Research design, instruments, population and sampling, and selected methods to be used in analyzing the data for this study are presented

RESEARCH DESIGN

In this study, we attempted to assess the attitudes and perceptions of the state managers' jobs and their agencies and to examine the relationships among the selected variables. We did not intend to describe causal effects by manipulating the variables, but rather to examine the variables and their relationships in the natural setting. The most desirable design for this kind of study is survey research (Kidder and Judd 1986).

Survey research is a technique for collecting data from a population or samples by asking questions. Kidder and Judd (1986) indicated that

human language is a powerful and precise medium for phrasing and answering questions about attitudes, behaviors, experiences, or virtually any other topic, real or imagined, past, present, and future (p. 220).

However, when we ask questions about individual attitudes and perceptions directly, it is possible to obtain inaccurate responses

depending on the situations and the interviewers. Sometimes, the respondents may have not thought about the questions at all or may not be familiar with the subjects. The respondents may be unwilling to give their answers or may be unable to express them verbally. Also, the respondents may give different answers depending on the interviewers' skills and behavior. This suggests that verbal reporting approaches are somewhat limited for obtaining concrete facts from informants. Systematic methods and well-trained, skilled interviewers are required for effective use of this type of method for collecting data.

A more significant problem with the personal interview method is high cost. When a study requires covering a large geographical area as in this study, travel and subsistence costs for interviewers are high.

Another survey method of data collection is the questionnaire, which offers several advantages over the personal interview. It can be distributed to a wider geographic area and can save an immense amount of time and expense. However, one major disadvantage is the response rate. The researchers cannot be certain to obtain an acceptable rate of return. To address this problem, the researchers must build into the study a means of obtaining a large enough sample. Also, to obtain a high quality of data, the researchers must carefully select and present the kinds of items, arrangement of items, and instructions.

For this study, the written mail questionnaire was an appropriate method for data collection, because this study surveyed state managers who were spread over the entire state. One of the most critical concerns in using the questionnaire is what kind of instrument will be used. The instrumentation will be discussed in the following section.

INSTRUMENTS

In order to develop an instrument to measure employees' attitudes and perceptions, considerable time and effort are required. Unless there is a special need to measure highly specialized and complex behavior in an organization, it is advisable to use appropriate standardized instruments which are already developed and widely used (Stone 1978; Dunham and Smith 1979). Such standardized instruments provide several advantages. First of all, the standardized instruments have been carefully developed over a period of years to accurately measure specific attitudes and perceptions, so reliability and validity have already been proved. Also, since many researchers have used them for periods of time, there are considerable amounts of normative data which can be used for comparison purposes. This allows the researcher to report the results of measurement in far greater detail than he can in the absence of previous data.

Since this study was interested in the managers' general attitudes and perceptions regarding their jobs and organizations, no specially designed instruments were required; therefore, selected standardized instruments were used. For the study, three different instruments were used. The instruments had been developed mainly to assess private sector organizations, so words such as "company" and "business" were reworded into "organization or agency" and "work" to fit public sector organizations. In the following discussion, each instrument will be explained and the rationale for having used it will be discussed.

Part I: Reliability and Validity of the Instrument

The Organizational Climate Questionnaire was used to measure the organizational climate of the managers in Oregon State Government. This instrument was constructed by Litwin and Stringer (1968) in order to collect members' perceptions of and subjective responses to the organizational environment. They defined the climate of an organization operationally as "the sum of the perceptions of individuals working in that organization (p 66)."

The instrument consists of 50 statements about an organization. The respondent is asked to reply to each item using a four-point Likert scale format -- definitely agree, inclined to agree, inclined to disagree, or definitely disagree -- as it applies to his/her organization. The 50 items on Litwin and Stringer's (1968) questionnaire consist of nine separate a priori scales, which they defined as:

1. Structure (8 items) - the feeling that employees have about the constraints in the group; how many rules, regulations, procedures there are; whether there is an emphasis on "red tape" and going through channels or if there is a loose and informal atmosphere.

2. Responsibility (7 items) - the feeling of being your own boss; not having to double-check all your decisions; when you have a job to do, knowing that it is your job.

3. Reward (6 items) - the feeling of being rewarded for a job well done; emphasis on positive regards rather than punishments; the perceived fairness of the pay and promotion policies.

4. Risk (5 items) - the sense of riskiness and challenge in the job and in the organization; whether there is an emphasis on taking calculated risks, or whether playing it safe is the best way to operate.

5. Warmth (5 items) - the feeling of general good fellowship that prevails in the work group atmosphere; the emphasis on being well-liked; the prevalence of friendly and informal social groups.

6. Support (5 items) - the perceived helpfulness of the managers and other employees in the group; emphasis on mutual support from above and below.

7. Standards (6 items) - the perceived importance of implicit and explicit goals and performance standards; the emphasis on doing a good job; the challenge represented by impersonal and group goals.

8. Conflict (4 items) - the feeling that managers and other workers want to hear different opinions; the emphasis placed on getting problems out in the open, rather than smoothing them over or ignoring them.

9. Identity (4 items) - the feeling that you belong to a company and you are a valuable member of a working team; the importance placed on this kind of spirit (pp. 81-82).

Over a period of time, an improved version of the instrument was administered to over 500 managers, supervisors, technicians, specialists, and salesman in a wide variety of organizations. According to Litwin and Stringer (1958), seven of the nine scales showed good scale consistency (the extent to which items in a scale are positively related and measure the same factors) (p. 82). They evaluated construct validity through analysis of scale intercorrelation. The warm scales

were strongly related to the identity scales ($r=.609$). The identity scales were strongly related to the support scales ($r=.57$). They concluded that "these three scales tap a common dimension of climate and should be combined in future research" (p. 83). There was also quite a strong intercorrelation between the reward and warmth ($r=.54$) and reward and identity ($r=.56$) scales. But Litwin and Stringer suggested leaving reward as a separate scale because of the important relationship existing between reward and motivation.

For further investigation of the validity and reliability of the instrument, Sims and LaFollette (1975) and Muchinsky (1976) administered this instrument to different samples, (the former to a Medicare Center and the latter to a public utility) utilizing the same factor analysis, they obtained the results shown in Table I, for the reliability of the instrument.

The table shows that five scales (structure, reward, warmth, support, and identity) had reasonably satisfactory reliability and the remaining four scales (responsibility, risk, standard, and conflict) had less than satisfactory reliability. The conflict scale had the lowest reliability in the Muchinsky study. Even Litwin and Stringer suggested that the scale be dropped from the questionnaire. Therefore, the conflict scales were eliminated in this study.

The two studies show two different factor structures. There are similar factors, such as interpersonal milieu from the Muchinsky study and affective tone toward people from the Sims and LaFollette study, but other factors are totally different. On the other hand, the reliability

TABLE I
INTERNAL CONSISTENCY RELIABILITIES, MEANS, AND STANDARD
DEVIATIONS OF THE ORGANIZATIONAL CLIMATE A PRIORI SCALES
AND DERIVED FACTORS

A Priori Scales	S and L a Reliabilities	Reliabilities	Mean	S.D.
1. Structure	.79	.77	2.43	.93
2. responsibility	.34	.46	2.42	.88
3. Reward	.67	.31	2.29	.87
4. Risk	.12	.47	2.47	.84
5. Warmth	.76	.81	2.69	.81
6. support	.69	.77	2.56	.83
7. Standards	.37	.49	2.98	.81
8. Conflict	.21	.01	2.34	.84
9. Identity	.79	.81	2.79	.79
Derived Factors (Muchinsky)				
1. Interpersonal Milieu		.75	2.98	.80
2. Standards		.54	3.00	.81
3. Affective Tone Toward Mgt/Org		.91	2.35	.86
4. Org. Structure and Procedures		.82	2.49	.93
5. Responsibility		.56	2.38	.86
6. Organizational Identification		.82	2.81	.79
Derived Factors (Sims and LaFollette)				
1. Affective Tone Toward People	.92		2.55	.58
2. Affective Tone Toward Mgmt		.82	2.48	.51
3. Policy and Promo- tion Clarity		.69	2.31	.68
4. Job Pressure and Standards		.58	2.56	.46
5. Openness of Upward Comm.		.69	2.38	.73
6. Risk in Decision Making		.45	2.31	.58

a= Split-half reliabilities reported by Sims and LaFollette.
Paul M. Muchinsky (1976, p. 378).

of both factors was improved and appeared to be satisfactory. After observing other studies for the reliability and validity of the instrument (Meyer 1968; Downey, Hellriegel, Phelps, and Slocum 1974;\ Sims and LaFollette 1975), Muchinsky concluded that it was quite possible to have different factor structures from different samples or populations because of members' different perceptions, and he suggested that the routine factor analysis of a questionnaire be used when the instrument is administered. Since the population of this study consisted of public sector managers, different factors were expected; and to protect the reliability of the instrument, factor analysis was utilized, as we can see in Chapter V on the research findings.

Part II: Reliability and Validity of the Instrument

In this part, job characteristics, internal motivation, general job satisfaction, and individual growth need strength were measured. These scales were drawn from the Job Diagnostic Survey (JDS), which was developed by Hackman and Oldham (1975) for the following purposes: (1) to diagnose the objective characteristics of jobs prior to work redesign; (2) to evaluate the satisfaction which individuals obtain from overall factors of their jobs and from the different facets of their jobs such as pay, job security, supervision, and co-workers; and (3) to examine the readiness of individuals to respond positively to "enriched" jobs -- that is, individual growth need strength and internal motivations.

This instrument was developed on the basis of the job characteristics theory, which was mentioned in the Job Characteristics section. Hackman and Oldham (1975) spent approximately two years

developing the JDS. During the developmental stages, 1500 employees from 15 different organizations responded to the instrument.

Modifications were made by adding, deleting and/or changing items.

The JDS consists of a total of 83 items. The instrument includes measurements of job characteristics, experienced psychological states, affective outcomes (general satisfaction, growth satisfaction, and internal work motivation), and individual growth need. For this study, 38 items were drawn, including job characteristics, general satisfaction, internal work motivation, and individual growth need.

Experienced psychological states and growth satisfaction items were excluded because they were not related to this study. Although context satisfaction items were relevant to this study, these items were excluded because their reported reliability and validity were poor. In fact, Survey Item Bank: Volume 1 (1984) suggests that since "the psychometric properties of these scales tend to be poor or largely unknown, other scales are better to measure these variables" (p. 19.0[11]).

Job Characteristics: The job characteristic items measure five core dimensions of a job, which are defined as follows:

1. Skill variety (3 items) - the degree to which a job requires a variety of different activities for carrying out the work activities which involve the use of a number of different skills and talents of the employee.

2. Task identity (3 items) - the 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.

3. Task significance (3 items) - the degree to which the job has a substantial impact on the lives or work of other people, whether in the immediate organization or in the external environment.

4. Autonomy (3 items) - the degree to which the job provides substantial freedom, independence, and discretion to the employee in scheduling the work and in determining the procedures to be used in carrying it out.

5. Feedback from the job itself (3 items) - the 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 or her performance.

General Job Satisfaction. This item indicates an overall measure of the degree to which the employee is satisfied and happy with the job. The general satisfaction scores can be drawn from the scores of the five questions dispersed in two different sections of this part.

Individual Growth Need Strength. This item intended to measure the respondent's desire to obtain "growth" satisfaction from his or her work. The JDS provides two separate measures of growth need strength. One section asks respondents directly how much they would like to have a number of specified conditions present in their jobs. The other section asks respondents to make comparative choices between two jobs -- one characterized by such factors as challenge, complexity, and autonomy, and the other characterized by such factors as high pay, job security, and fringe benefits. Of the two sections, this study used the latter section because the reported psychometric properties of the scale for

this section had been more favorable than for the first one (Hackman and Oldham 1975, and Aldag and Brief 1979).

On the basis of data obtained from 658 employees working at 62 different jobs in seven organizations, Hackman and Oldham (1975) tested the internal consistency reliability of each scale and the discriminant validity of the items which were measured through "off-diagonal correlation. (The median off-diagonal correlation is the median correlation of items scored on a given scale consisting of items scored on different scales of the same type. Thus, the median off-diagonal correlation for skill variety [.19] is the median correlation for all items measuring skill variety with all the items measuring the other six job dimensions [Hackman and Oldham 1975, p. 164]). Table II represents the internal consistency reliabilities and discriminant validity which were tested by Hackman and Oldham.

As we can see from the table, the internal consistency reliability ranges from a high of .76 (general satisfaction) to a low of .59 (task identity). The median off-diagonal correlation ranges from .12 (task identity) to .25 (general satisfaction). The results suggest that both internal consistency reliability of the instrument and the discriminant validity of the items are satisfactory (Hackman and oldham 1975, p. 164).

In spite of other studies and reports (Aldag, Barr, and brief 1978; Survey Item Bank: Volume 1, measures of satisfaction 1984), which evaluated the instrument at acceptable levels of reliability, there have been many ambiguous reports about the dimensionality of the job

TABLE II
RELIABILITIES OF THE JOB DIAGNOSTIC SURVEY
(JDS) SCALES

JDS Scale	n	Internal Consistency Reliability	Median Off-Diagonal Correlation
Job Dimensions			
Task Identity	3	.71	.19
Task Significance	3	.59	.12
Autonomy	3	.66	.14
Feedback from the Job Itself	3	.71	.19
Effective Responses to the Job			
General Satisfaction	5	.76	.25
Internal Work Motivation	6	.76	.25
Growth Need Strength			
Job Choice Format	12	.71	

n = Number of items composing each scale
(Hackman and Oldham 1975, p. 164).

characteristics of the instrument (Dunham, Aldag, and Brief 1977; Pierce and Dunham 1976, Podorney, Gilmore, and Beehr 1980). The instrument is assumed to measure five distinct job characteristics. Yet numerous studies have found that factor-analytic procedures often yield results involving fewer than or more than five factors. For example, Dunham (1976) advocated a simple-factor solution representing job complexity, and other studies have accepted three- or four-factor solutions (Dunham et al 1977); Pokorney et al. 1980).

This dimensionality problem with the instrument has been solved by revising the instrument in recent studies (Harvey, Binnings, and Nilan

1985, Idaszak and Drasgow 1987). Harvey et al. (1985) determined that the dimensionality problem of the JDS originated from the artifacts (using negative wording in the questions). Meanwhile, after consultation with Hackman and Oldham, Idaszak (1987) revised the negatively worded items in the questionnaire. They administered the questionnaire to employees of a printing company (n=134); they found that the revised scales yielded five factors and that the factor coefficients were all above .80. They concluded that "the JDS scales are measuring their underlying constructs with accuracies that are adequate for theoretical research" (Idaszak et al., p. 74). The revised items were utilized for this study. Table III shows the revised JDS items.

The Job Description Index (JDS) was used to measure the job context factors for this study. The JDI was developed by Smith, Kendall, and Hulin (1969) to evaluate job satisfaction. They defined job satisfaction as the difference between what is expected and "what is experienced in relation to the alternative available in a given situation" (p. 6). The JDI is intended to measure the affective responses to this difference by measuring feelings associated with different facets of the job situation. It measures satisfaction over five areas of a job: the work itself, supervision, pay, co-workers, and opportunities for promotion on the job. Each facet is measured with 9 or 18 adjectives that have been shown to differentiate between perceptually good and bad jobs.

This instrument was particularly appropriate for this study, because research reported that the JDI measures especially the micro

level of job dimensions. since this study dealt with the constructs of organizational climate and job satisfaction together, one of the

TABLE III
REVISED JOB DIAGNOSTIC SURVEY ITEMS

Scale	Item
Autonomy	The job gives me a chance to use my personal initiative and judgment in carrying out the work.
Task Identity	The job is arrange so that I dan do an entire piece of work from beginning to end.
Skill Variety	The job requires me to use a number of complex or high-level skills.
Task Significance	The job itself is very significant and important in the broader scheme of things.
Feedback	After I finish a job, I know whether I

Idaszak and Drasgow 1987, p. 71).

concerns was the possible strong intercorrelation between the two constructs. Since organizational climate deals with perceptions and descriptions of the organization, and job satisfaction deals with affective reactions to the job situation, the two constructs can have strong mutual influences on one another.

Johannesson (1973) raised this problem of the difficulty in distinguishing between the two constructs and indicated that the two concepts might be converged with each other. But this issue was resolved through empirical study by Downey et al. (1974). Their study showed that the correlation between organizational climate questionnaire scores (Litwin and Stringer 1968) and JDI scores (Smith et al. 1969) was significantly different enough (ranged from $r=.01$ to $.43$) when other

variables such as organizational level were controlled. They concluded that "the climate construct is intended to be organizational characteristics at the macro level while satisfaction is more a function of the individual and his particular job" (p. 244). LaFollette and Sims (1975) reported similar results.

Part III: Reliability and Validity of the Instrument

Almost all studies on the measurement of job satisfaction describe the JDI as "the most carefully developed scale to date" (Locke 1976, p. 334). Smith et al. (1969) reported its validity and reliability. Estimates of the intended consistency reliability were derived from responses obtained from 80 male employees in two electronic plants. Corrected split-half estimates for the five scales ranged from .80 for "pay" to .88 for "co-workers", with a median of .86.

Scale intercorrelations, derived from a pooled, heterogeneous sample of 980 males in 21 plants, ranged from .28 to .42, with a median of .39. For 627 females, these intercorrelations ranged from .46 to .52, with a median of .48. Although there were some intercorrelations among the five scales, the median amount of variance in any one scale accounted for by another scale was only approximately 12 percent, while the median amount of reliable variances in a scale, based on internal consistency estimates, was approximately 74 percent. Thus, Smith et al. argued that a median of approximately 50 percent of a scale's variance was both reliable and specific to that scale. These figures indicated that the five JDI scales were reasonably independent and reliable.

Gillet and Schwab (1975) also investigated convergent and discriminant validities of the JDI and the Minnesota Satisfaction

Questionnaire (MSQ) and reported statistically significant convergent and discriminant validity.

SUBJECTS AND DATA COLLECTION

This study was conducted under a contract with the State Management Association (SMA), which consists of managers in Oregon State Government. Beginning in September 1989, the principal investigator, Dr. Ellis, and this researcher had three meetings with the board members of SMA to discuss what their interests were, whom we wanted to include in the survey, and what the procedures were for completing this study. The subjects of the study were all state managers at and above the level of supervisor in all of the state agencies and the judicial branch (executive and political appointees were included, but elected officials and the legislative branch were excluded). The Personnel and Labor Relations division of the Oregon State Government provided a list of the population which included 6,641 managers' names, with the position, sex, agency, and location of work for each. From the list, through the computer program available in SYSTAT, a proportionate, systematic random sample was drawn, representing 15 percent of the population. The resulting sample included 995 managers, as we can see in Table IV.

In order to explain the importance of this study and to ensure support from the heads of the agencies for this study, Dr. Ellis and this researcher attended the State Agency Heads meeting on February 25, 1990, and presented the purposes of this study, the expected procedure for conducting the survey, and the potential benefits of the study. At

TABLE IV
FREQUENCY DISTRIBUTION OF MANAGER'S SEX BY TOTAL
POPULATION AND SAMPLE SIZE

Sex	Total Population		Sample Size	
	N	%	N	%
Female	3142	47.3	480	48.3
Male	3497	52.7	515	51.7
Declined	2	0.0	0	0.0
TOTAL	6641	100.0	995	100.0

the request of the SMA, the Executive Department agreed to support this project by writing a letter asking the state managers to cooperate with the study. In addition, the department agreed to provide in-kind service, such as the use of the state mail system to distribute the questionnaire. The questionnaire (see Appendix) contained a cover letter explaining the study, requesting the managers' voluntary participation, agreeing to protect anonymity and confidentiality, and providing instructions regarding the mailing. The questionnaire also included a letter signed by Fred Miller, head of the Executive Department, asking managers to cooperate. Questionnaires were delivered in bulk to agencies in person, mailed in bulk to agencies through the Interagency Mail System, or mailed directly to the managers at their work places. Of the first group of 995 questionnaires sent, 512 questionnaires were returned (about a 51 percent return rate). About a month after the first group were sent, the second group of questionnaires were distributed to the managers who had not returned theirs from the first group, with a revised cover letter (see Appendix) encouraging their participation. Of 483 questionnaires mailed, 144 usable question-

naires were returned. So, altogether, of 995 questionnaires, 656 usable questionnaires were returned, for a return rate of 66 percent.

CONFIDENTIALITY AND ANONYMITY

To protect the respondents and ensure confidentiality, two copies of an Informed Consent Statement, which explained possible risks associated with this study and ways to keep the information confidential, were sent to each of the subjects. Each subject who agreed to participate in this study was asked to keep one copy of the form and return the other to this researcher. In addition, the following procedure was used to ensure confidentiality and anonymity.

1. Each questionnaire was numbered in sequence, with no identification on the questionnaire (such as the name of the respondent or the agency). It was possible for the researcher to identify who was given a questionnaire, but no one else was able to identify who had completed it.

2. The questionnaire was designed so that, upon completion, it was to be folded back by the last page and stapled in three different places with the return address visible. Thus, individual identity and confidentiality could be protected when the respondents returned the questionnaires.

3. The questionnaires were returned directly to Portland State University, a "neutral" institution, for data analysis by the researcher.

4. Portland State University's Human Subjects Research Review committee reviewed and approved the questionnaire.

DESCRIPTION OF THE DATA ANALYSIS METHODS

The data gathered for this study were analyzed through the computer program available in SYSTAT. Before the hypotheses were tested, the climate questionnaire was submitted for factor analysis to ensure the construct validity of the instrument. For variables to be clearly associated with factors, principal component analysis was used and was followed by both varimax and equamax rotations of the selected factor solutions. To determine the reliability of the instruments of this study, Cronbach's alpha coefficient, which is more appropriate for multipoint questionnaires, was used.

Generally speaking, since this study primarily attempted to determine the job characteristics-job satisfaction relationship and the moderating effects of the need for personal growth (NPG) and organizational climate on the relationship, Pearson's product moment correlation coefficients, which were based on listwise deletion of missing data, were the most widely used statistical treatment for determining the relationship, and subgroup methods were used to determine the moderating effects. For the subgroup methods, the scores of the related variables were divided into three groups -- low, medium, and high -- to detect the curvilinear relationship. A Chi-square analysis and z scores were used to test the significance of the differences between the correlation coefficients, and the hypotheses tested at a .01 level and a .05 level.

Specifically, the first hypothesis was intended to compare the strength of the relationship between job characteristics and job satisfaction with the strength of the relationship between job context

factors and job satisfaction. To test this hypothesis, in addition to Pearson's product moment correlation coefficients, multiple regression analyses were conducted with job satisfaction as a dependent variable, and multiple squared r scores for the variables of job characteristics and the variables of job context were compared. The second hypothesis, which was intended to determine the relationship between job satisfaction and demographic factors, was tested through a chi-square analysis. The rest of the hypotheses (hypotheses III, IV, and V) basically used the subgroup methods to determine the moderating effects of organizational climate and the need for personal growth (NPG) on the job characteristics-job satisfaction relationship, and they used scores to test the significance of the moderating effects.

CHAPTER V

RESEARCH FINDINGS

The findings of this study are presented in four sections. The first section consists of the information about the study's respondents. The second section includes an analysis of the survey instrument. The third section addresses the findings derived from testing the five research hypotheses formulated to guide the investigation. The chapter concludes with a summary of the findings.

DESCRIPTION OF THE RESPONDENTS

The nine demographic variables assumed to have some relationship to organizational climate and level of job satisfaction of the state managers were investigated. Frequency distributions of the respondents by these variables appear in Table V.

Gender and Race

The breakdown of the respondents by gender indicates that the number of males was slightly higher than the number of females: 50.6 percent of the respondents were male, and 47.4 percent of the respondents were female. The variable of race was divided into two categories, white and non-white. A majority (94.8 percent) of the respondents were white.

Age

Age was divided into five categories: under 30, 31-40, 41-50, 51-60 and 60 or older. The frequency distribution by age shows that the

41-50 category was the largest, with more than 40 percent of the respondents. On the other hand, the smallest categories were under 30, with 3.2 percent and 60 or older with 2.9 percent.

Marital Status and Dependents

Marital status was divided into four categories: married, single, divorced, and separated/widowed. Over three-fourth (75.2 percent) of the respondents were married. The number of dependents was divided into five categories: 0, 1,2, 3, and/or more. About one-fourth (24.4 percent) of the respondents did not have any dependents, more than one-third (32.3 percent) of the respondents had more than three dependents, and the remainder (about 45 percent) had one or two dependents.

Level of Education

Over two-thirds (67.6 percent) of the respondents completed either associate degrees or bachelors' degrees. Thirteen-point-seven (13.7) percent had masters' degrees, 4 percent held doctoral or law degrees, and 12 percent had only high school diplomas or less.

Current Position

On the basis of the classifications of the Personnel and Labor Division of the Oregon State Government, the positions of state managers were classified into nine different categories: agency head, assistant administrator of an agency, mid-level manager, technical/progressional first-line supervisor, clerical first-line supervisor, trades first-line supervisor, staff support, technical specialist, and others. For the purpose of analysis, technical, clerical, and trades first-line supervisors were combined into a first-line supervisor category, and 38

percent belonged to this category. Also, mid-level managers were about the same proportion (36.3 percent). Only two percent of the respondents were agency heads, and 7.8 percent were staff support.

Years in Current Position and Years in Present Agency

The variables of years in position and years in present agency were divided into five categories: less than one year, 1-5, 6-10, 11-20, and more than 20 years. Almost one-half of the respondents have stayed in their current positions for one to five years, and only 5 percent have stayed for more than 20 years in their current positions. On the other hand, 37 percent have stayed in the same agency for 11 to 20 years, and 16.8 percent have stayed more than 20 years in the same agency.

TABLE V
FREQUENCY DISTRIBUTION OF RESPONDENTS'
DEMOGRAPHIC CHARACTERISTICS

Characteristic	Respondents	
	N	%
Gender:		
Male	332	50.6
Female	331	47.4
No Response	13	2.0
TOTAL	656	100.0
Race:		
White	622	94.2
Non-White	24	3.7
No Response	10	1.5
TOTAL	656	100.0

TABLE V
 FREQUENCY DISTRIBUTION OF RESPONDENTS'
 DEMOGRAPHIC CHARACTERISTICS
 (continued)

Characteristics	Respondents	
	N	%
Age, Years:		
Under 30	21	3.2
31 to 40	212	32.4
41 to 50	267	40.7
51 to 60	127	19.4
No Response	10	1.5
TOTAL	656	100.0
Marital Status:		
Married	493	75.2
Single	54	8.2
Divorced	84	12.8
Separated/Widowed	12	1.8
No Response	13	2.0
TOTAL	656	100.0
Dependents:		
0	160	24.4
1	140	21.3
2	133	20.3
3	108	16.5
4 or more	104	15.8
No Response	11	1.7
TOTAL	656	100.0
Level of Education:		
High School Diploma or Less	78	11.9
Some College or Associate Degree	247	37.7
Bachelor's Degree	196	29.9
Master's Degree	90	13.7
Doctoral or Law Degree	27	4.1
Others	18	2.7
TOTAL	656	100.0

TABLE V
FREQUENCY DISTRIBUTION OF RESPONDENTS'
DEMOGRAPHIC CHARACTERISTICS
(continued)

Characteristics	Respondents	
	N	%
Current Position:		
Agency Head	14	2.1
Assistant Manager	31	4.7
Mid-Level Manager	238	36.3
First-Line supervisor	236	38.0
Staff support	51	7.8
Technical Specialist	56	8.5
Others	18	2.7
No Response	12	1.8
TOTAL	656	100.0
Years in Position:		
Less than 1 year	75	11.4
1 to 5	302	46.0
6 to 10	126	19.3
11 to 20	108	16.5
More than 20	35	5.3
No Response	10	1.5
TOTAL	656	100.0
Years in Present Agency:		
Less than 1 year	29	4.4
1 to 5	136	20.7
6 to 10	125	19.1
11 to 20	246	37.5
More than 20	110	16.8
No Response	10	1.5
TOTAL	656	100.0

INSTRUMENT ANALYSIS

As was mentioned earlier, the data from Part I of the instrument (organizational Climate Questionnaire) were submitted for factor analysis to identify the factor structure of the samples, using the subprogram factor from the SYSTAT program. Both varimax rotation and

equamax rotation were completed. After careful examination of the resultant factor structure, it was determined that the factor structure of equamax rotation best represented the data from the questionnaire, which are shown in Tables VI-XIII.

The eight factors emerging were:

1. Job pressure: This factor identifies the feeling of pressure on the job to continually improve quality of performance as emphasized by the management of the organization.

2. Responsibility: This factor identifies the degree of responsibility the employees have in getting the job done, solving problems, and making decisions in the organization.

3. Conformity: This factor describes the feeling of being constrained to follow the rules, administrative details, and formal authority in performing jobs in the organization.

4. Organizational Identification: This factor describes the feeling of belonging to an organization, the feeling of pride in the organization, personal loyalty, and a team approach to work.

5. Rewards: This factor identifies the ways that management provides rewards through a humanitarian approach. In other words, when the members perform well, management encourages them by recognizing their achievements and helping them to achieve their career aspirations.

6. Organizational Clarity: This factor identifies the perception held by employees that policies, organizational processes, and responsibilities are clearly structured.

7. Risk: This factor identifies the feeling of personal challenge and risk-taking associated with the success of the organization.

Item Number	Factors							
	1	2	3	4	5	6	7	8
4.	-.113	.012	-.746	-.062	-.118	-.147	-.098	-.038
5.	-.081	.048	-.714	-.052	-.046	-.193	-.268	-.038
8.	-.174	-.168	-.649	-.118	-.113	.063	-.114	.019
Variance explained by rotated components 2.961								
Percent of total variance explained 6.437								

TABLE IX

FACTOR 4: ORGANIZATIONAL IDENTIFICATION

Item Number	Factors							
	1	2	3	4	5	6	7	8
45	.098	.118	.169	.665	.232	.206	.132	.285
42	.021	.169	-.471	.595	.045	-.029	-.007	-.108
43	-.010	.156	.134	.550	.185	.253	.132	.338
46	.116	.046	.186	.541	.230	.211	.227	.356
44	.096	.114	.156	.540	.241	.351	.167	.228

TABLE X

FACTOR 5: REWARDS

Item Number	Factors							
	1	2	3	4	5	6	7	8
18	-.004	.081	.232	.058	.667	.273	.131	.179
20	.226	.043	.043	-.002	.628	.290	.169	.212
35	.129	.169	.198	.232	.511	.115	.176	.354
33	-.036	.071	.120	.172	.505	.102	.178	.275
Variance explained by rotated components 3.251								
Percent of total variance explained 7.067								

TABLE XI
FACTOR 6: ORGANIZATIONAL CLARITY

Item Number	Factors							
	1	2	3	4	5	6	7	8
2	-.024	.059	.053	.247	.290	.692	.087	-.004
3	-.015	.071	.087	.053	.210	.662	-.020	.170
7	.334	.042	-.026	.183	.129	.552	.198	.069
6	.275	.078	.124	.031	.116	.542	.299	.264

Variance explained by rotated components 3.108
percent of total variance explained 6.756

TABLE XII
FACTOR 7: RISK

Item Number	Factors							
	1	2	3	4	5	6	7	8
24	.094	.025	.185	.030	.156	.198	.698	.170
22	-.025	.130	.046	.043	.160	-.064	.688	-.011

Variance explained by rotated components 2.841
Percent of total variance explained 6.177

TABLE XIII
FACTOR 8: WARMTH

Item Number	Factors							
	1	2	3	4	5	6	7	8
29	.057	.017	-.002	.120	.179	.169	.138	.758
30	.109	.027	.099	.220	.229	.144	.170	.723
31	.188	.213	.177	.287	.266	.110	.107	.543
27	.066	.157	.097	.399	.256	.252	.098	.538

Variance explained by rotated components 3.669
Percent of total variance explained 7.975

Internal consistency coefficients (Cronbach's alpha) were calculated to determine the reliability of each factor. The results are shown in Table XIV. The organizational identification factor has the highest reliability, .92. The risk factor and the responsibility factor have the lowest reliability, .58, which is above the acceptable level.

In summary, as we can see from Table I in Chapter IV, in the section on INSTRUMENTS, the eight factors in this study were similar to the original a priori scales developed by Litwin and Stringer. Also, there were factors common to both this study and the Muchinsky study (such as standards, responsibility, organizational identification, and interpersonal milieu). However, very little similarity was found

TABLE XIV
INTERNAL CONSISTENCY COEFFICIENTS OF
THE ORGANIZATIONAL CLIMATE FACTORS

Factors	Reliabilities
1. Job Pressure	.62
2. Responsibility	.58
3. Conformity	.70
4. Organizational Identification	.92
5. Rewards	.77
6. Organizational Clarity	.69
7. Risk	.58
8. Warmth	.83

between the factors in this study and the six factors in the Sims and LaFollette study, except for one factor which was related to interpersonal relationships. In terms of the reliabilities, as with the Muchinsky study and the Sims and LaFollette study, the factors in this study had higher reliabilities overall than those in the original.

Internal consistency coefficients were also used to determine the reliability of Part II (Job Diagnostic Survey) and Part III (Job Description Index). In Part II, the highest coefficient was .82 for feedback, and the lowest coefficient was .65 for task variety. The average coefficient for this instrument was .78. In Part III, the coefficients were .76 for work, .87 for supervision, .78 for pay, .82 for co-workers, and .89 for promotion. Overall, the coefficients showed that the reliabilities of the instruments were above the acceptable level.

TESTING THE HYPOTHESES

Hypothesis I. The relationship between job context factors and job satisfaction is weaker than the relationship between job characteristics and job satisfaction.

As we know, the job context factors used in this study were supervision, pay, co-workers, and promotion. The job characteristics used in this study were autonomy, feedback, skill variety, task identity, and task significance. Also, an MPS (Motivating Potential Score), which is a summary score of the five job characteristics, was included to examine the overall relationship between job characteristics and job satisfaction. Pearson's correlation coefficient was used to determine the relationships between job satisfaction and job context factors and between job satisfaction and job characteristics. Stepwise multiple regression analysis was used to compare the strength of the job context factors-job satisfaction relationship.

As we can see from Table XV, all variables have significant relationships with job satisfaction ($p.001$), and the job's MPS shows the strongest relationship with job satisfaction (.507). These results certainly suggest that job characteristics as a whole is one of the most important factors for determining job satisfaction. However, when we compare the correlation coefficients for the relationships between the five job characteristic variables and job satisfaction with the correlation coefficients for the relationships between the four job context variables and job satisfaction, it is not clear whether the job characteristic variables have stronger relationships with job satisfaction than the job context variables have.

To ascertain this difference, stepwise multiple regression was run with job satisfaction as the dependent variable. Table XVI shows the results of the multiple regression. In the table, the standard coefficient (Beta Weights) can be thought of as the regression coefficient that would be obtained if the various predictor variables were equal to one another in terms of mean and standard deviation (Kachigan 1986). In other words, we can determine the weight of the contribution of each variable by examining the standard coefficient of each variable. The standard coefficients were .221 for supervision, .220 for co-workers, .183 for autonomy, .124 for promotion, .122 for feedback, and .111 for task identity. These results show that supervision and co-workers are the two strongest predictors of job satisfaction, which indicates that these job context factors are stronger predictors than the job characteristics of autonomy and feedback.

Also, to compare the strength of the relationship between job context factors and job satisfaction with that of the relationship

TABLE XV
PEARSON'S CORRELATION COEFFICIENTS BETWEEN JOB SATISFACTION
AND JOB CONTEXT FACTORS BETWEEN JOB SATISFACTION
AND JOB CHARACTERISTICS

Variables	Correlation Coefficients
Job Context Factors:	
Supervision	.469
Pay	.195
Co-Workers	.404
Promotion	.336
Job Characteristics:	
Skill Variety	.244
Task Identity	.327
Task Significance	.209
Autonomy	.438
Feedback	.426
MPS	.507

All significant at .001 level

between job characteristics and job satisfaction, two different multiple regression analyses were run: the first one used job context variables as independent variables; the second one used job characteristic variables as independent variables. Then, the squared multiple r scores were compared. These scores allowed us to determine the proportion of variance in job satisfaction explained by the independent variables. As we can see from Table XVII, job context factors as a whole can explain a 31.8 percent variance in job satisfaction. On the other hand, job characteristics can explain a 25 percent variance in job satisfaction.

These squared multiple r scores show that the job context factor can explain a greater variance in job satisfaction than job characteristics can. On the basis of these findings, the hypothesis predicting a stronger relationship between job characteristics and job satisfaction than between job context factors and job satisfaction was not accepted.

TABLE XVI

MULTIPLE REGRESSION USING JOB SATISFACTION
AS DEPENDENT VARIABLE AND JOB CHARACTERISTICS
AND JOB CONTEXT FACTORS AS PREDICTOR
VARIABLES

DEP VAR: SATISF N: 578 MULTIPLE R: .648 SQUARED MULTIPLE R: .420
ADJUSTED SQUARED MULTIPLE R: .410

VARIABLE	COEFFICIENT	STD ERROR	STD COEF	T	P(2TAIL)
Constant	0.199	0.341	0.000	0.584	0.599
Supervision	0.022	0.004	0.221	5.971	0.000
Pay	0.012	0.006	0.062	1.859	0.063
Co-Workers	0.025	0.004	0.220	6.361	0.000
Promotion	0.017	0.005	0.124	3.539	0.000
Job Identity	0.092	0.031	0.111	2.937	0.003
Job Autonomy	0.200	0.043	0.183	4.005	0.000
Skill Var.	-0.010	0.047	-0.008	-0.216	0.829
Task Signif.	0.070	0.045	-0.055	-1.549	0.122
Feedback	0.119	0.040	0.122	2.987	0.003

ANALYSIS OF VARIANCE

SOURCE	SUM-OF-SQUARES	DE	MEAN-SQUARE	F-RATIO	P
Regression	308.104	9	34.234	45.609	0.000
Residual	426.332	568	0.751		

Hypothesis II. There is no relationship between the state managers' job satisfaction and their age, gender, race, education, current position, and years in current position.

For Hypothesis II, the respondents' scores of job satisfaction were divided into three levels: low (37.3 percent), medium (31.8 percent), and high (30.8 percent) (see Table XVIII). Chi-square analysis of the level of job satisfaction by nine demographic variables

TABLE XVII
DIFFERENCE IN SQUARED MULTIPLE R FOR STEPWISE MULTIPLE
REGRESSION ANALYSIS WITH JOB SATISFACTION
AS THE DEPENDENT VARIABLE

Variables	Squared Multiple R	F-Ratio
Variables for Job Context Factors	.318	67.97
Variables for Job Characteristics	.220	47.88
Variables for Job Context Factors & Job Characteristics Together	.420	45.61

TABLE XVIII
LEVEL OF JOB SATISFACTION

Job Satisfaction Score	Respondents N %		Total Mean Score
(Range 1.6-7)			5.171
Low (1.6-4.8)	245	37.3	
Medium (5-5.8)	208	31.8	
High (6-7)	203	30.8	
TOTAL	656	100.0	

was used to determine the significance of the relationship between the level of job satisfaction and demographic factors.

Of the nine variables, Chi-square analysis of the level of job satisfaction by sex, race, number of dependents, years in current position, and years in present agency did not reveal any meaningful or significant relationship (see Table XIX).

When observed by marital status, respondents who were divorced, separated, or widowed had a larger proportion at a low level of job satisfaction than at the other levels. However, respondents who were married were distributed in equal proportions at each level of job satisfaction. Thus, respondents who were divorced, separated, or widowed seemed to be less satisfied with their jobs than the other respondents did. However, this relationship was not significant.

When observed by age, respondents who were under 30 years old had the largest proportion at a low level of job satisfaction; meanwhile, respondents over 60 years old had the largest proportion at a high level of job satisfaction. Also, respondents under 50 years old tended to have the largest proportion at a low level of job satisfaction, and respondents over 50 years old tended to have the largest proportion at a high level of job satisfaction. Therefore, a positive relationship between job satisfaction and age ($r=.060$) was revealed, but the relationship was not significant.

When observed by position, respondents who were at the top level of administration had the largest proportion at a medium or high level of job satisfaction; the distribution of the mid-level managers was about the same at each level of job satisfaction; and first-line

supervisors, staff support, and technical specialists had the largest proportion at a low level of job satisfaction. Thus, it appeared that respondents who were in high-level positions were more satisfied with their jobs than others, but this relationship also was not significant.

The only variable that revealed a statistically significant relationship with the level of job satisfaction was the level of education. A large proportion of respondents who did not have bachelors' degrees (had only high school diplomas or some college education) indicated a low level of job satisfaction, whereas the group who had bachelors' degrees indicated a high level of job satisfaction. However, for the respondents who had more than bachelors' degrees, the level of job satisfaction decreased; thus, the respondents who attended some graduate school or had masters' degrees represent a large proportion of those with low levels of job satisfaction. These results indicated that there was a curvilinear relationship between education and job satisfaction, and the relationship was statistically significant at a 0.05 level.

Hypothesis II, suggesting no relationship between job satisfaction and selected demographic factors, was accepted for sex, marital status, number of dependents, age, race, position, years in current position, and years in present agency. However, the hypothesis was rejected for education.

Hypothesis III. The relationship between job characteristics and job satisfaction is stronger for the group of managers who score high on the need for personal growth than for the group of managers who score low on the need for personal growth.

This hypothesis tested the moderating effect of the need for personal growth (NPG) on the job characteristics-job satisfaction relationship. For this hypothesis, subgroup analyses were conducted for low, medium, and high scores of respondents' NPG. The scores for job characteristic variables including MPS were correlated with job satisfaction scores for the low-NPG group, for the medium-NPG group,

TABLE XIX
CHI-SQUARE ANALYSIS OF LEVEL OF JOB SATISFACTION
OF RESPONDENTS BY DEMOGRAPHIC FACTORS

Variable	Low		Level of Job Satisfaction				Total		X Value
	N	%	N	%	N	%	N	%	
Gender:									
Male	121	36.45	104	31.33	107	32.33	332	51.63	0.67
Female	119	38.26	101	32.48	91	29.26	311	48.37	
TOTAL	240	37.33	205	31.88	198	30.79	643	100.00	
Marriage:									
Married	179	36.31	159	32.25	155	31.44	493	76.67	1.67
Single	20	37.04	16	29.63	18	33.33	54	8.40	
Divorced/ Separated									
Widowed	41	42.71	29	30.21	26	27.08	96	14.93	
TOTAL	240	37.33	204	31.73	199	30.95	643	100.00	
Age:									
Under 30	12	57.14	6	28.57	3	14.29	21	3.25	11.43
31 to 40	72	33.96	81	38.21	59	27.83	212	32.81	
41 to 50	104	38.95	78	29.21	85	31.84	267	41.33	
51 to 60	48	37.80	35	27.56	44	34.65	127	19.66	
Over 60	6	31.58	5	26.32	8	42.11	19	2.94	
TOTAL	242	37.58	205	31.73	199	30.80	646	100.00	
Dependents:									
0	56	35.00	47	29.38	57	35.63	160	24.80	10.44
1	55	39.29	43	30.71	42	30.00	140	21.70	
2	55	41.35	34	25.56	44	33.08	133	20.62	
3	44	40.74	38	35.19	26	24.07	108	16.74	
4	32	30.77	42	40.38	30	28.85	104	16.12	
TOTAL	242	37.52	204	31.63	199	30.85	645	100.00	
Race:									
White	235	37.78	194	31.19	193	31.03	622	96.28	2.47
Non-White	8	33.33	11	45.83	5	20.83	24	3.72	
TOTAL	243	37.62	205	31.73	198	30.65	646	100.00	
Education:									
High School or less	37	47.44	19	24.36	22	28.21	78	12.07	28.44

TABLE XIX
CHI-SQUARE ANALYSIS OF LEVEL OF JOB SATISFACTION
OF RESPONDENTS BY DEMOGRAPHIC FACTORS
(continued)

Some College or Assoc. Degree	94	38.06	82	33.20	71	28.74	247	38.24	
B.A.	42	30.22	41	29.56	56	40.29	139	21.52	
Grad School	27	47.37	19	33.33	11	19.30	57	8.82	
Position:									
Agency Head or Asst. Admins.	14	31.11	16	35.56	15	33.33	45	6.99	8.93
Mid-Level									
M.A.	37	41.11	28	31.11	25	27.78	90	13.93	
Ph.D. or Law Degree	6	22.22	14	51.85	7	25.93	27	4.18	
Others	0	.00	2	25.00	6	75.00	8	1.23	
TOTAL	243	37.62	205	31.73	198	30.65	646	100.00	
Manager	83	34.87	75	31.51	80	33.61	238	36.95	
First-Line									
Supv.	93	39.41	79	33.47	64	27.12	236	36.65	
Staff S.	21	41.18	13	25.49	17	33.33	51	7.92	
Technical									
Spec.	22	39.29	20	35.71	14	25.00	56	8.20	
Others	9	50.00	2	11.11	7	38.89	18	2.79	
TOTAL	242	37.58	205	31.83	197	30.59	644	100.00	
Years in Curr. Position:									
Less than									
1 Year	24	32.00	25	33.33	26	34.67	75	11.61	4.60
1 to 5	22	40.40	95	31.46	85	28.15	302	46.75	
6 to 10	50	39.68	38	30.16	38	30.16	126	19.50	
11 to 20	37	34.26	34	31.48	37	34.26	108	16.72	
Over 20	10	28.57	13	37.14	12	34.29	35	5.42	
TOTAL	243	37.62	205	31.73	198	30.65	646	100.00	
Years in Current Agency:									
Less than									
1 Year	10	34.48	9	31.03	10	34.48	29	4.49	8.55
1 to 5	57	41.91	48	35.29	31	22.79	136	21.05	
6 to 10	53	42.40	35	28.00	37	29.60	25	19.35	
11 to 20	86	34.96	81	32.93	79	32.11	246	38.08	
Over 20	37	33.64	32	29.09	41	33.27	110	17.03	
TOTAL	243	37.62	205	31.73	198	30.65	646	100.00	

* P.05

and for the high-NPG group. Z scores were used to test significant differences between the correlation coefficients. The scores of NPG were divided into three levels (see Table XX) in order to detect the

nonlinear effect of NPG on the job characteristics-job satisfaction relationship.

As we can see from Table XXI, in the results of the test for the moderating effect, the correlation coefficients for the group with a high need for personal growth (NPG) appeared to be highest for all five job characteristic variables among the three groups. However, when the coefficients of the group with a medium NPG were compared to those of the group with a low NPG, the coefficients of three variables -- task significance, task identity, and feedback -- were higher for the group with a low NPG than for the group with a medium NPG. In other words, the coefficients demonstrated that the strength of the job character-

TABLE XX
LEVEL OF THE NEED FOR PERSONAL GROWTH

Need for Growth	Respondents N	%	Total Mean Score
Range (2-4.910)	3.363		
Low (2-3.0910)	213	34.5	
Medium (3.182-3.545)	226	35.6	
High (3.636-4.910)	192	29.9	
TOTAL	656	100.00	

istics-job satisfaction relationship was greatest for the group with a high NPG. However, they failed to prove that the strength of the relationship for the medium-MPG group was greater than that for the low-NPG group. Actually, the reverse was true. These results suggest that the impact of respondents' NPG on the job characteristics-job satisfaction relationship was not linear.

Table XXII shows the significance of the differences between the correlation coefficients of the groups with different levels of NPG>. First of all, neither the differences in correlations between the low-NPG group and the medium-NPG group nor those between the low-NPG group and the high-NPG group were significant. The significance of the differences was revealed only between the coefficients of the medium-NPG group and those of the high-NPG group for the three variables (task significance, task identity, and feedback) at a .05 level.

The strongest relationship between job characteristics and job satisfaction occurred in the group with a high NPG, and the correlation of the group with a high NPG was significantly different from that of the group with a medium NPG, but not from the group with a low NPG. Therefore, Hypothesis III, suggesting a stronger relationship between job characteristics and job satisfaction for the high-NPG group than for the low-NPG group was partly accepted.

TABLE XXI
CORRELATIONS BETWEEN JOB SATISFACTION AND JOB
CHARACTERISTICS FOR RESPONDENTS WITH LOW,
MEDIUM, AND HIGH NEED FOR
PERSONAL GROWTH

Job Characteristics	Low	Need for Personal Growth Medium (N=213)	High (N=229)	(N=182)
Task Significance		.248**	.078	.297**
Task Identity		.280**	.253**	.426**
Skill Variety		.194**	.289**	.289**
Autonomy		.368**	.425**	.493**
Feedback		.430**	.332**	.490**
MPS		.490**	.430**	.561**

** p.001

Hypothesis IV. There is no statistically significant moderating effect of the dimensions of organizational climate on the job characteristics-job satisfaction relationship.

As we saw from the section on instrument analyses, the eight dimensions of organizational climate -- job pressure, responsibility, conformity, organizational identification, rewards, organizational clarity, risk, and warmth -- were identified through factor analysis of the data from the climate questionnaire. To determine the moderating effects of organizational climate on the job characteristics-job satisfaction relationship, eight different hypotheses were formulated according to the different dimensions of organizational climate, and these hypotheses were tested separately.

TABLE XXII
SIGNIFICANCE OF THE DIFFERENCES BETWEEN CORRELATIONS
OF JOB SATISFACTION AND JOB CHARACTERISTICS
FOR GROUPS WITH LOW, MEDIUM, AND HIGH NEED
FOR PERSONAL GROWTH

Job Characteristics	Z for Difference Between		
	Low & Medium	Medium & High	Low & High
Task Significance	1.579	-2.398*	-0.054
Task Identity	.347	-2.031*	-1.660
Skill Variety	-1.063	0.000	-1.063
Autonomy	-0.747	-0.908	-1.600
Feedback	1.232	-1.969*	-0.076
MPS	.793	-1.740	-0.961

* $p < .05$

The methods used to test these hypotheses were similar to the methods that were used to test Hypothesis III, because both hypotheses were

intended to test the moderating effects of the selected variables on the job characteristics-job satisfaction relationship. Therefore, the subgroup method was used, dividing the scores of each climate dimension into three levels -- low medium, and high -- and z scores were used to test the significance of the differences between correlation coefficients for the groups with different levels of climate dimensions.

For the five job characteristic variables, if two or three of the variables' relationships with job satisfaction significantly changed because of the moderating impact of organizational climate, the hypothesis was partly rejected; if four or more variables' relationships with job satisfaction changed significantly, the hypothesis was accepted.

In the following section, the hypotheses are presented in the order in which they were tested.

Hypothesis IV. There is no significant statistical difference in the job characteristics-job satisfaction relationship between the subgroup of managers who perceive the job pressure dimension of organization climate to be high and the subgroup of managers who perceive it to be low.

This hypothesis is intended to test the impact of perceived job pressure on the job characteristics-job satisfaction relationship. The level of the job pressure dimension of organization climate is shown in Table XXIII. The scores ranged from 1 though 4, and the mean score was 2.612. Over one-half of the respondents were concentrated in the medium level of job pressure (scores between 2.5 and 3).

The results of Pearson's correlation are shown in Table XXIV. As we can see from the table, the relationships between job characteristics

and job satisfaction were stronger for the groups with medium and low levels of job pressure than for the group with a high level. This finding suggests that the perceived high level of job pressure had the effect of diminishing the strength of the job characteristics-job satisfaction relationship. Meanwhile, depending on the level of job

TABLE XXIII
LEVEL OF JOB PRESSURE CLIMATE

Job Pressure Climate	Respondents N	%	Total Mean Score
Range (1-4)			2.612
Low (1-2)	216	32.9	
Medium (2.5-3)	359	54.8	
High (3.5-4)	81	12.4	
TOTAL	656	100.0	

pressure, the relationship between each job characteristic variable and job satisfaction changed: for the group with a low level of pressure, task significance and feedback were most strongly related to job satisfaction; for the group with a medium level, job pressure, job autonomy and feedback were most strongly related to; for the group with a high level of job pressure, job autonomy was most strongly related to job satisfaction. The correlation coefficients were significant, except for three coefficients at the high level of job pressure ($p.05$).

The z scores in Table XXV show the significance of the differences between the correlations. According to the z scores, the correlation coefficients for the relationship between task significance and job

satisfaction were significantly different between the low-level group and the medium-level group and between the low-level group and the high-level group ($p.05$). Also, the correlation coefficient for the relationship between task identity and job satisfaction was significantly different between the group with a medium level of job pressure and the group with a high level ($p<.05$). The remaining differences between the correlation coefficients of groups with different levels

TABLE XXIV
CORRELATION BETWEEN JOB SATISFACTION AND
JOB CHARACTERISTICS FOR RESPONDENTS
WITH LOW, MEDIUM, AND HIGH
JOB PRESSURE CLIMATE

Job Characteristics	Job Pressure Climate		
	Low (n=209)	Medium (N=345)	High (N=80)
Task Significance	.374**	.151*	.028
Skill Variety	.200**	.306**	.173
Task Identity	.303**	.377**	.122
Autonomy	.336**	.461**	.425**
Feedback	.419**	.437**	.288**
MPS	.476**	.513**	.393**

** $p<0.01$ * $p,0.05$

of job pressure appeared not to be significant. Therefore, the hypothesis postulating no statistical difference between the correlation coefficients of the group with different levels of job pressure was partly rejected.

The correlation coefficients (Table XXVII) revealed that, in general, for the group with a low level responsibility, the job characteristics-job satisfaction relationship was stronger than for the

other two groups. The variables of job autonomy and feedback showed especially strong relationships with job satisfaction. On the other hand, the job characteristics-job satisfaction relationship was weakest for the group with a medium level of responsibility. The strength of the relationship increased slightly for the group with a high level of responsibility. For this group, particularly, task significance showed a strong relationship with job satisfaction, compared to the other groups. All of the correlation coefficients were significant ($p < .05$).

TABLE XXV
SIGNIFICANCE OF THE DIFFERENCES BETWEEN CORRELATIONS OF
JOB SATISFACTION AND JOB CHARACTERISTICS FOR GROUPS
WITH LOW, MEDIUM, AND HIGH JOB PRESSURE CLIMATE

Responsibility Climate Score	N	Respondent %	Total Mean Score
Range (1-3.750)			2.298
Low (1-2.000)	243	37	
Medium (2-2.500)	233	35	
High (2.75-3.750)	180	28	
TOTAL	656	100	

TABLE XXVI
LEVEL OF RESPONSIBILITY CLIMATE

Responsibility Climate Score	Respondent N	%	Total Mean Score
Range (1-3.750)	243	37	2.298
Low (1-2.000)	233	35	
Medium (2-2.500)	180	28	
High (2.75-3.7500)	656	100	

Z scores in Table XXVIII show the statistical significance of the differences between the correlation coefficients of the groups with different levels of responsibility. The only significant difference was revealed in the correlation coefficients for the feedback-job satisfaction relationship between the low-level group and the medium-level group ($p < .05$). The rest of the differences between correlation coefficients were not significant. However, the correlation coefficients for the

TABLE XXVII

CORRELATION BETWEEN JOB SATISFACTION AND JOB CHARACTERISTICS FOR RESPONDENTS WITH LOW, MEDIUM, AND HIGH RESPONSIBILITY CLIMATE

Job Characteristics	Responsibility Climate		
	Low (N=221)	Medium (N=228)	High (N=171)
Task Significance	.174*	.171*	.313**
Skill Variety	.198**	.270**	.248**
Task Identity	.320**	.270**	.332**
Autonomy	.459**	.371**	.335**
Feedback	.504**	.314**	.398**
MPS	.550**	.395**	.487**

* $p < .05$ ** $p < 0.01$

MPS-job satisfaction relationship between the low-level group and the medium-level group showed significance ($p < .05$). This occurred because of the nature of the score, which was calculated by putting more weight on autonomy and feedback than on the other three dimensions of job characteristics. Since only the feedback-job satisfaction relationship was altered significantly between the group with a low level of responsibility and the group with a medium level, we could hardly reject the hypothesis supporting no moderating effects of responsibility on the

job characteristics-job satisfaction relationship, so this hypothesis was accepted.

Hypothesis IV: There is no significant statistical difference in the job characteristics-job satisfaction relationship between the subgroup of managers who perceive the conformity dimension of organizational climate to be high and the subgroup of managers who perceive it to be low.

It is the purpose of this hypothesis to examine the impacts of the managers' feelings of being constrained to follow the rules, regulations, and formal authority in the agency (conformity dimension) on the relationship between job characteristics and job satisfaction. The level of conformity is shown in Table XXIX. The scores ranged from 1 through 4, and the total mean score was 2.580.

TABLE XXVIII
SIGNIFICANCE OF THE DIFFERENCES BETWEEN JOB SATISFACTION
AND JOB CHARACTERISTICS CORRELATION COEFFICIENTS
FOR GROUPS WITH LOW, MEDIUM, AND HIGH
RESPONSIBILITY CLIMATE

Job characteristics	Z for Difference Between		
	Low & Medium	Medium & High	Low & High
Task Significance	- .172	-1.510	-1.508
Skill Variety	- .947	.216	- .673
Task Identity	.828	- .647	.109
Autonomy	1.021	.392	1.356
Feedback	2.248*	- .961	1.178
MPS	2.150*	-1.020	.948

* $p < .05$

TABLE XXIX
LEVEL OF CONFORMITY CLIMATE

Conformity Climate	Respondents N	%	Total Mean Score
Range (1-4)			2.580
Low (1-2)	192	29.2	
Medium (2.33-2.667)	227	34.6	
High (3-4)	237	36.2	
TOTAL	656	100.0	

The correlation coefficients (Table XXX) show that the managers' job satisfaction was most strongly related to job characteristics for three variables -- task identity (.337), autonomy (.393), and feedback (.445) -- for the group with a high level of conformity, and weaker relationships between job satisfaction and the three job characteristic variables resulted for the groups with medium and high levels of conformity. However, a reverse phenomenon occurred for task significance. Its relationship with job satisfaction was strongest for the group with a low level of required conformity (.306), and the relationship was weaker for the groups with medium and high levels of conformity. The skill variety-job satisfaction relationship was strongest for the group with a medium level of conformity. In general, the job characteristics-job satisfaction relationship was strong for the group with a high level of conformity. The most important job characteristic variables for determining job satisfaction changed according to the level of required conformity. All correlation coefficients were significant at a .05 level except the coefficients of skill variety at high and low levels of conformity.

Through z scores in Table XXXI, we can determine the significance of the difference between the coefficients for the job characteristics-job satisfaction relationships of the groups with different levels of conformity. First, the task significance-job satisfaction relationship was significantly different between the group with low-level conformity and the group with high-level conformity ($p < .05$). Second, the skill variety-job satisfaction relationship was significantly different between the group with a low level and the group with a medium level of conformity ($p < .05$). Also, even if the changes in the relationship

TABLE XXX

CORRELATION BETWEEN JOB SATISFACTION AND JOB CHARACTERISTICS
FOR RESPONDENTS WITH LOW, MEDIUM, AND HIGH CONFORMITY CLIMATE

Job Characteristics	Conformity Climate		
	Low (N=235)	Medium (N=215)	High (N=235)
Task Significance	.306**	.175**	.111**
Skill Variety	.140	.329**	.174
Task Identity	.170*	.213**	.337**
Autonomy	.266**	.333**	.393**
Feedback	.292*	.306**	.445**
MPS	.333**	.415**	.499**

** $p < 0.01$ * $p < 0.05$

between the other job characteristic variables and job satisfaction were not significant at a .05 level, the z scores for task identity (1.778) and for feedback (1.809) between the group with a low level and the group with a high level of conformity show that the differences between the correlation coefficients were fairly significant. Of the five variables, at least two of the variables' relationships with job

satisfaction were moderated significantly. Therefore, the hypothesis postulating no moderating effect of conformity on the relationship was partly rejected.

Hypothesis IVd: There is no significant statistical difference in the job characteristics-job satisfaction relationship between the subgroup of managers who perceive the organizational identification dimension of organizational climate to be high the subgroup of managers who perceive it to be low.

This hypothesis is intended to test the impact of the managers' feelings of pride and personal loyalty toward their agencies on the relationship between job satisfaction and job characteristics. The level of the organizational identification dimension of organization climate is shown in Table XXXII. The scores ranged from 1 through 4, and the total mean score was 2.840.

The correlations in table XXIII show that the job characteristics-job satisfaction relationship was strongest for the group with a low level of organizational identification. For the groups with medium and high levels of organizational identification, the strength of the relationships declined in general. However, the task significance-job satisfaction relationship was strongest for the group with a high level of organizational identification, and the correlations decreased for the groups with medium and low levels of organizational identification. The relationships of skill variety and autonomy with job satisfaction were

TABLE XXXI
SIGNIFICANCE OF THE DIFFERENCES BETWEEN CORRELATIONS FOR
THE RELATIONSHIPS BETWEEN JOB SATISFACTION AND
JOB CHARACTERISTICS FOR GROUPS WITH LOW,
MEDIUM, AND HIGH CONFORMITY CLIMATE

	z for Difference Between		
	Low & Medium	Medium & High	Low & High
Task Significance	1.366	.705	2.071*
Skill Variety	-2.000*	1.779	- .333
Task Identity	- .455	-1.326	-1.778
Autonomy	- .762	- .737	-1.485
Feedback	- .158	-1.716	-1.809
MPS	- .99	-1.126	-2.102

*p<.05

TABLE XXXII
LEVEL OF ORGANIZATIONAL IDENTIFICATION CLIMATE

Organizational Identification Climate	Respondents		Total Mean Score
	N	%	
Range (1-4)			2.840
Low (1-2.4)	202	31.6	
Medium (2.6-3.0)	214	34.5	
High (3.2-4.0)	223	34.9	
TOTAL	639	100.0	

strongest for the group with a low level of organizational identification, but weakest for the group with a medium level of organizational identification. All of the correlations were significant at 0.05 level except task significance at a low level and skill variety at a medium level of identification.

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The z scores in Table XXIV reveal significant differences between the correlation coefficients of the groups with different levels of organizational identification. Because of the moderating effect of organizational identification, the coefficients for three job characteristic variables' relationships with job satisfaction changed depending on the group's level of organizational identification. First, the correlation coefficients for the task significance-job satisfaction relationship were significantly different between the group with a low level and the group with a high level of organizational identification ($p < .05$). Second, the correlation coefficient for task, identity-job satisfaction relationship was significantly different between the group with a low level and the group with a high level of organizational identification. Third, the correlation coefficients for the autonomy-

TABLE XXIII
CORRELATION BETWEEN JOB SATISFACTION AND JOB CHARACTERISTICS
FOR RESPONDENTS WITH LOW, MEDIUM, AND HIGH LEVELS
OF ORGANIZATIONAL IDENTIFICATION CLIMATE

Job Characteristics	Organizational Identification Climate		
	Low (N=187)	Medium (N=208)	High (N=215)
Task Significance	.078	.192**	.298**
Skill Variety	.222**	.065	.193**
Task Identity	.348**	.238**	.135*
Autonomy	.401**	.225**	.263**
Feedback	.348**	.143**	.263**
MPS	.451**	.372**	.316**

** $p < 0.01$

* $p < 0.05$

job satisfaction relationship were significantly different between the group with a low level and the group with a medium level of organizational identification. The other differences between correlation coefficients were not significant. Therefore, the hypothesis suggesting no significant impact of organizational identification on the job characteristics-job satisfaction relationship was partly rejected.

Hypothesis IVe: There is no significant statistical difference in the job characteristics-job satisfaction relationship between the subgroup of managers who perceive the reward dimension of organizational climate to be high and the subgroup of managers who perceive it to be low.

This hypothesis is intended to test the impact of managers' feelings regarding rewards they received when they performed well on the relationship between job satisfaction and job characteristics. The level of reward climate is shown in Table XXXV. The scores ranged from 1 through 4. The total mean score was 2.155, and almost half of the managers' responses indicated that they were at the medium level.

From Table XXXVI, we can see that the job characteristic-job satisfaction relationship was strongest for the group with a low level of reward. Generally speaking, as the groups' perceptions of reward became more positive, weaker relationships between job characteristics and job satisfaction resulted. For the group with a low level of reward task identity, autonomy, and feedback were strongly related to job satisfaction; for the group with a medium level of reward, task significance was highly correlated to job satisfaction; and for the group with a high level of reward, all three variables related to job satisfaction with about equal strength. The correlations were

significant at a .05 level, except for the group with a low level of reward.

TABLE XXXIV
SIGNIFICANCE OF THE DIFFERENCE BETWEEN CORRELATIONS
OF JOB CHARACTERISTICS AND JOB SATISFACTION FOR
GROUPS WITH LOW, MEDIUM, AND HIGH LEVEL OF
ORGANIZATIONAL IDENTIFICATION CLIMATE

Job Characteristics	Low & Medium	z for Difference Between Medium & High	Low & High
Task Significance	-1.158	-1.204	-2.352*
Skill variety	1.574	-1.357	.261
Task Identity	1.188	1.079	2.293
Autonomy	1.930*	-.416	1.534
Feedback	.049	.881	.940
MPS	.960	.735	1.590

*<.05

TABLE XXXV
LEVEL OF REWARD CLIMATE

Reward climate	N	Respondents %	Total Mean Score
Range (1-4)			2.155
Low (1-1.8)	203	31.9	
Medium (2-2.6)	273	37.6	
High (2.75-4)	180	30.5	
TOTAL	656	100.0	

Table XXXVII shows the significance of the differences between correlations. First, the correlation coefficients for the task significance-job satisfaction relationship between the group with a low

level of reward and the group with a medium level of reward were significantly different ($p < .05$). Second, the coefficients for the

TABLE X
CORRELATION BETWEEN JOB SATISFACTION AND JOB CHARACTERISTICS
FOR RESPONDENTS WITH LOW, MEDIUM, AND HIGH LEVELS
OF REWARD CLIMATE

Job Characteristics	Reward Climate		
	Low (N=178)	Medium (N=259)	High (N=176)
Task Significance	.102	.300**	.208**
Skill Variety	.281**	.207**	.257**
Task Identity	.356**	.219**	.278**
Autonomy	.463**	.350**	.234**
Feedback	.363**	.366**	.261**
MPS	.494**	.437**	.342**

** $p < 0.01$ * $p < 0.05$

autonomy-job satisfaction relationship were significantly different between the group with a low level of reward and the group with a high level of reward ($p < .05$). The other correlation coefficients did not show significant differences between the groups with different levels of reward. Therefore, the hypothesis postulating no significant difference between correlations was partly rejected.

Hypothesis IVf: There is no significant statistical difference in the job characteristics-job satisfaction relationship between the subgroup of managers who perceive the organizational clarity dimension of organizational climate to be high and the subgroup of managers who perceive it to be low.

This hypothesis is intended to test the impact of the degree of clarity of an agency's organizational process, policies, and responsi-

bility on the relationship between job characteristics and job satisfaction. The levels of organizational clarity are shown in Table XXXVIII. The scores ranged from 1 through 4, and the total mean score was 2.787.

TABLE XXXVII

SIGNIFICANCE OF THE DIFFERENCES BETWEEN CORRELATIONS OF JOB SATISFACTION AND JOB CHARACTERISTICS FOR GROUPS WITH LOW, MEDIUM, AND HIGH LEVELS OF REWARD CLIMATE

Job Characteristics	Low & Medium	z for difference Between Medium & Low & High	
Task significance	-2.143*	.989	-1.056
Skill Variety	.765	-.489	.252
Task Identity	1.296	-.653	.775
Autonomy	1.418	1.286	2.476
Feedback	.000	1.193	1.093
MPS	.785	1.142	1.766

* $p < 0.05$

The correlation coefficients (Table XXXIX) show that job characteristics were most strongly related to job satisfaction for the group with a medium level of organizational clarity. For the group with a high level of organizational clarity, the relationship was weaker and the correlation coefficients were lowest compared to the other two groups. Also, from the table we can see that the variables for job characteristics-job satisfaction relationships were strongest for the group with a medium level of organizational clarity, except the one for feedback. This variable was most strongly related to job satisfaction

for the group with a low level of organizational clarity. For the group with a high level of organizational clarity, task significance was most strongly related to job satisfaction. The correlation coefficients were significant ($p < .05$), except those for task significance in the group with a low level of clarity and task identity in the group with a high level of clarity.

TABLE XXXVIII
LEVEL OF ORGANIZATIONAL CLARITY

Organizational Clarity Climate	N	Respondents %	Total Mean Score
Range (1-4)			2.787
Low (1-2.5)	246	37.5	
Medium (2.750-3)	216	32.9	
High (3.250-4)	194	29.6	
TOTAL	656	100.0	

TABLE XXXIX
CORRELATION BETWEEN JOB SATISFACTION AND JOB CHARACTERISTICS
FOR RESPONDENTS WITH LOW, MEDIUM, AND HIGH LEVELS
OF ORGANIZATIONAL CLARITY

Job Characteristics	Organizational Clarity Climate		
	Low (N=238)	Medium (N=208)	High (N=188)
Task Significance	.073	.285**	.283**
Skill Variety	.232**	.285**	.148*
Task Identity	.286**	.438**	.126
Autonomy	.419**	.441**	.269**
Feedback	.423**	.417**	.178*
MPS	.485**	.521**	.303**

** $p < 0.01$

* $p < 0.05$

Table XL shows the significance of the differences between the correlation coefficients of the groups with different levels of organizational clarity. According to the z scores, except for the correlation coefficients for the skill variety-job satisfaction relationship, the correlation coefficients for the relationships between the four job characteristic variables and job satisfaction were significantly different between the groups with different levels of organizational clarity. For example, the z score indicates that the strength of the relationship between task significance and job satisfaction was significantly different between the group with a low level of clarity and the group with a medium level of clarity and between the group with a low level of clarity and the group with a high level of clarity ($p < .05$). Also, the correlation coefficients for the relationships between three job characteristic variables -- task variety, autonomy, and feedback and job satisfaction were significantly different between the group with a medium level of clarity and the group with a high level ($p < .05$). Including the fairly significant z scores (e.g., 1.704 and 1.865), almost two-thirds of the z scores in the table showed significant differences between the correlations of the groups with different levels of organizational clarity. Therefore, the hypothesis suggesting no impact of the dimension of climate on the job characteristics-job satisfaction relationship was rejected.

Hypothesis IVg: There is no significant statistical difference in the job characteristics-job satisfaction relationship between the subgroup of managers who perceive

TABLE XL
SIGNIFICANCE OF THE DIFFERENCES BETWEEN CORRELATIONS
OF JOB SATISFACTION AND JOB CHARACTERISTICS FOR
GROUPS WITH LOW, MEDIUM, AND HIGH LEVELS
OF ORGANIZATIONAL CLARITY CLIMATE

Job Characteristics	z for Difference Between		
	Low & Medium	Medium & High	Low & High
Task Significance	-2.271*	0.000	-2.224*
Skill Variety	- .615	1.423	.847
Task Identity	-1.865	3.461**	1.704
autonomy	- .250	1.952*	1.745
Feedback	.010	2.662**	2.775**
MPS	- .479	2.584**	2.171*

** p<.01 * p<.05

Some agencies encourage their managers to take risks for the success of their agencies, but some agencies do not allow their managers to take risks without permission from top management. This hypothesis is intended to test the impact of the level of personal risk-taking which managers perceived in their agencies on the relationship between job characteristics and job satisfaction. The level of risk is shown in Table XLI. The scores ranged from 1 through 4, and the total mean score was 2.521.

Even if it is difficult to recognize a particularly meaningful pattern from Table XLII, through the correlation coefficients for the MPS-job satisfaction relationship, we can see that the job characteristics-job satisfaction relationship was strongest for the group with a low level of risk compared to the other two groups. Also, the important variables for determining job satisfaction changed

group with a low level of risk compared to the other two groups. Also, the important variables for determining job satisfaction changed

TABLE XLI
LEVEL OF RISK CLIMATE

Job Characteristics	N	Respondents %	Total Mean Score
Range (1-4)			2.521
Low (1-2)	239	36.4	
Medium (2.5-3)	335	51.1	
High (3.5-4)	82	12.5	
TOTAL	656	100.0	

according to the level of the perceived risk. For example, task significance and skill variety showed the strongest relationship with job satisfaction for the group with highly supported personal risk-taking; however, task identity and feedback were most strongly related to job satisfaction for the group with a low level of risk. In the case of autonomy, the relationship was strongest for the group with a medium level of risk. In all but one coefficient of task identity for the high-level risk group, the correlation coefficients were significant ($p < .01$).

Z scores in Table XLIII show that all the differences between correlation coefficients were not significant at a .05 level. A fairly significant difference was shown between the correlation coefficients for the relationship between task identity and job satisfaction when the low-level risk group was compared to the high-level one. But the difference was significant at a .1 level. So, we can hardly say that

difference between the correlation coefficients of the different levels of risk dimension in organizational climate was accepted.

TABLE XLII

CORRELATION BETWEEN JOB SATISFACTION AND JOB CHARACTERISTICS FOR RESPONDENTS WITH LOW, MEDIUM, AND HIGH LEVELS OF RISK CLIMATE

Job Characteristics	Risk Climate		
	Low (N=233)	Medium (N=321)	High (N=80)
Task Significance	.170**	.173**	.317**
Skill Variety	.258**	.188**	.337**
Task Identity	.378**	.269**	.166
Autonomy	.405**	.415**	.344**
Feedback	.420**	.355**	.406**
MPS	.528**	.424**	.486**

** p<0.01 * p<0.05

TABLE XLIII

SIGNIFICANCE OF THE DIFFERENCES BETWEEN CORRELATIONS OF JOB SATISFACTION AND JOB CHARACTERISTICS FOR GROUPS WITH LOW, MEDIUM, AND HIGH LEVELS OF RISK CLIMATE

Job Characteristics	Z for Difference Between		
	Low & Medium	Medium & High	Low & High
Task Significance	- .058	-1.173	-1.176
Skill Variety	.941	-1.283	- .626
Task Identity	1.430	.866	1.792
Autonomy	- .139	.646	.534
Feedback	.895	.622	.160
MPS	1.449	- .598	.398

** p<0.01 * p<0.05

Hypothesis IVh. There is no significant statistical difference in the job characteristics-job satisfaction

Hypothesis IVh. There is no significant statistical difference in the job characteristics-job satisfaction relationship between the subgroup of managers who perceive the warmth dimension of organization climate to be high and the subgroup of managers who perceive it to be low.

This hypothesis is intended to test the moderating effects of the sense of friendliness prevalent in an agency on the relationship between job characteristics and job satisfaction. The level of warmth dimension of organization climate is shown in Table XLIV. The scores ranged from 1 through 4. The total mean score was 2.884.

As Table XLV shows, the correlation coefficient for the job characteristics-job satisfaction relationship was weakest for the group With a high level of warmth in an agency; the relationships became stronger for the groups with low and medium levels of warmth. These results indicate that job characteristics became important factors in determining job satisfaction when the sense of friendliness was only moderate or not very prevalent in an agency. The differences between

TABLE XLIV
LEVEL OF WARMTH CLIMATE

Warmth Climate	Respondents		Total Mean Score
	N	%	
Range (1-4)			2.884
Low (1-2.5)	219	33.4	
Medium (2.75-3.00)	209	31.8	
High (3.25-4)	232	34.8	
TOTAL	656	100.0	

correlations show that task identity and autonomy were most strongly related to job satisfaction for the group with a low level of warmth, task significance and skill variety for the group with a high level of warmth, and feedback for the group with a medium level of warmth. The correlation coefficients were significant at a .05 level, except the relationship between task identity and job satisfaction for the group with a high level of warmth.

The z scores in Table XLVI show the significance of the differences between the correlation coefficients. The correlation coefficients for the relationships between job satisfaction and both task identity and autonomy were significantly different between the groups with medium and high levels of warmth and between the groups with low and high levels of warmth ($p < .05$). The correlation coefficients for the feedback-job satisfaction relationship also showed fairly significant differences between the groups with medium and high levels of warmth ($z = 1.898$). However, z scores for the differences between the correlations of task significance skill variety were not significant between the groups with different levels of warmth. Therefore, the hypothesis suggesting no significant effects of the warmth dimension of organizational climate on the job characteristics-job satisfaction relationship was partly rejected.

In summary, Hypothesis 4, postulating no statistically significant moderating effects of the dimensions of organizational climate on the job characteristics-job satisfaction relationship, was tested. This hypothesis was accepted for the risk and responsibility dimensions,

TABLE XLV
CORRELATION BETWEEN JOB SATISFACTION AND JOB CHARACTERISTICS
FOR RESPONDENTS WITH LOW, MEDIUM, AND HIGH LEVELS
OF WARMTH CLIMATE

Job Characteristics	Warmth Climate		
	Low (N=212)	Medium N=203)	High (N=219)
Task Significance	.141*	.192*	.201**
Skill Variety	.203**	.213**	.241**
Task Identity	.362**	.318**	.131
Autonomy	.416**	.388**	.199**
Feedback	.382**	.410**	.245**
MPS	.490**	.484**	.287**

** p<0.01 * p<0.05

rejected for the organizational clarity dimension, and partly rejected for the job pressure, conformity, organizational identification, reward, and warmth dimensions. Generally speaking, the moderating effects occurred most frequently on the relationships between the three job characteristic variables (task significance, task identity, and autonomy) and job satisfaction. These relationships showed significant differences in at least five different dimensions. However, the relationship between skill variety and job satisfaction was not very sensitive to the changes in the level of climate dimension. This relationship was significantly moderated only by the level of the conformity dimension. Also, the significant differences between correlation coefficients most frequently appeared between the low level and the high level of climate.

Hypothesis V. There is no significant statistical difference between the correlation coefficients for the job

TABLE XLVI
SIGNIFICANCE OF THE DIFFERENCES BETWEEN CORRELATIONS
OF JOB SATISFACTION AND JOB CHARACTERISTICS
FOR GROUPS WITH LOW, MEDIUM, AND HIGH LEVELS
OF WARMTH CLIMATE

Job Characteristics	Low & Medium	Z for Difference Between Medium & High	Low & High
Task Significance	-.051	-.112	-.639
Skill Variety	-.102	-.275	-.376
Task Identity	.459	2.050*	2.536**
Autonomy	.306	2.133*	2.439*
Feedback	-.367	1.898	1.530
MPS	.060	2.333*	2.394*

** p<0.01 * p<0.05

This hypothesis is concerned with the impact of the interaction between organizational climate and NPG on the job characteristics-job satisfaction relationship. To test this hypothesis, the respondents were divided into high, medium, and low groups for each dimension of organizational climate and for NPG scores, as was done with the testing of Hypothesis III and Hypothesis IV. Three-by-three tables were created to examine the interactions, with the dependent variable being the correlation coefficients for the job characteristics-job satisfaction relationship. To determine the correlation coefficients, the jobs' Motivational Potential Scores (MPS) -- a summary score of job characteristics -- were correlated with the scores of job satisfaction. To determine the extent to which the correlation coefficients had been changed due to the interactive effect, each group's coefficient was compared against the low, medium, and high levels of the NPG group's

To determine the extent to which the correlation coefficients had been changed due to the interactive effect, each group's coefficient was compared against the low, medium, and high levels of the NPG group's correlation coefficients for the job characteristics-job satisfaction relationship, which were .490, .430, and .561, respectively (see Table XIX). Finally, z scores were used to test the significance of the differences between the correlation coefficients for the groups with different levels of climate dimensions.

The three levels of NPG were presented earlier in Table XIX to test Hypothesis III, and the three levels of each dimension of organizational climate were presented in Tables XXV, XXVIII, XXXI, XXXIV, XXXVII, XL, and XLIII to test Hypothesis IV. Eight different null hypotheses were formulated to test the interactive effect between each dimension of organization climate and NPG on the job characteristics-job satisfaction relationship. Each hypothesis will be examined in order.

Hypothesis Va: There is no significant statistical difference between the correlation coefficients for the job characteristics-job satisfaction relationships resulting from the interaction of the need for personal growth and the job pressure dimension of organizational climate.

This hypothesis is intended to examine the impact of the interaction between the level of NPG and the level of job pressure dimension on the correlation coefficients for the job characteristics-job satisfaction relationship. As we can see from table XLVII, the strongest interactive effect on the correlation coefficients was shown for the high-MPG group. Specifically, the strength of the job

characteristics-job satisfaction relationship dramatically decreased because of a result of the interaction between the high-level NPG and the high-level job pressure groups, so the correlation coefficient dropped from .561 to .195 for the group with high-level NPG and high-level job pressure. On the other hand, the correlation coefficient increased notably due to the interactive effect for the group with the high-level NPG and medium-level job pressure, so the correlation coefficient increased from .561 to .612. The results indicate that with a medium level of job pressure, job characteristics were an important source in determining job satisfaction for the managers with a high-level of NPG; but with a high level of job pressure, job characteristics were not as important in determining job satisfaction for them.

The z scores in Table XLVIII show the significance of the differences between correlations. According to the z scores, the only significant difference was revealed between the group with a medium level of job pressure and the group with a high level of job pressure for the high-NPG managers ($z=2.262$) at a .05 level. The remaining differences between the correlation coefficients of the groups with different levels of job pressure appeared not to be significant. Therefore, the null hypothesis suggesting no significant impact of the interaction of job pressure and the NPG on the job characteristics-job satisfaction relationship was rejected only for the high-NPG managers.

Hypothesis Vb. There is no significant statistical difference in the job characteristics-job satisfaction relationships resulting from the interaction of the need for personal growth with the responsibility dimension of organizational climate.

TABLE XLVII

THE CORRELATIONS BETWEEN JOB CHARACTERISTICS (MPG) AND JOB SATISFACTION
MODERATED BY THE EFFECT OF INTERACTION BETWEEN JOB PRESSURE
CLIMATE AND THE INDIVIDUAL NEED FOR GROWTH

Need for Growth	The Level of Job Pressure Climate							
	Low N	r	Medium N	r	High N	r	Total N	r
Low	80	.458	92	.483	25	.473	197	.490
Medium	61	.422	132	.439	31	.389	224	.430
High	53	.594	113	.612	24	.195	190	.561
TOTAL	194	.476	337	.513	80	.393	611	.487

relationship. As we can see from Table XLIX, the interaction between the NPG and responsibility brought about the most notable change in the correlation coefficients for the group with a high NPG. First, due to the interaction, the correlation coefficient increased from .561 to .646 for the group with a high-level of NPG and a low level of responsibility. Second, the correlation coefficient for the group with a high-level of NPG and a medium level of responsibility declined from .561 to .305. A possible explanation for these changes is that for the high-NPG managers with the appropriate levels of given responsibility, job characteristics were not very important for job satisfaction, but when they felt that their responsibilities were somewhat limited, job characteristics were identified as an important source of job satisfaction. Another interesting fact we can observe from the table is the correlation coefficient changes for the groups with low-NPG and low levels of responsibility. The correlation coefficient increased from

TABLE XLVIII

SIGNIFICANCE OF DIFFERENCES BETWEEN CORRELATIONS FOR THE JOB
CHARACTERISTICS (MPS)-JOB SATISFACTION RELATIONSHIP
FOR GROUPS WITH LOW, MEDIUM, AND HIGH
JOB PRESSURE CLIMATE

Level of Need for Growth	z for Difference Between		
	Low & Medium	Medium & High	Low & High
Low	-.212	.057	-.083
Medium	-.152	.288	.156
High	-.235	2.262*	1.873

* $p < .0$

.490 to .596 as a result of the interaction between the low level of NPG and the low level of given responsibility. This increase indicates that even managers with a low level of NPG consider job characteristics as important determinants of job satisfaction when they feel their responsibilities are somewhat limited.

Z scores in Table L show the statistical significance of the differences between the correlation coefficients of the groups with different levels of responsibility. The significant difference in correlation coefficients occurred between the group with a low level and the group with a medium level of responsibility for the high-NPG managers at a .05 level. Also, even if the changes in correlation coefficients were not significant at a .05 level, the differences in the correlation coefficients between the group with low-level and the group with medium-level responsibility for the low-MPG managers, and between the group with medium-level and the group with high-level responsibility

TABLE XLIX

THE CORRELATIONS BETWEEN JOB CHARACTERISTICS AND JOB SATISFACTION
MODERATED BY THE INTERACTION EFFECT OF RESPONSIBILITY
CLIMATE WITH THE INDIVIDUAL NEED FOR GROWTH

Need for Growth	The Level of Responsibility							
	Low N	r	Medium N	r	High N	r	Total N	r
Low	77	.596	80	.393	40	.436	197	.490
Medium	69	.404	90	.436	63	.422	222	.430
High	71	.646	54	.305	65	.589	190	.561
TOTAL	217	.550	224	.395	168	.487	619	.487

for the high-NPG managers, were fairly significant ($z=1.638$ and $z=-1.878$, respectively). The other differences between correlation coefficients were not significant. Therefore, the hypothesis postulating no significant impact of the interaction between responsibility climate and NPG on the job characteristics-job satisfaction relationship was rejected, especially for the high-level NPG managers.

Hypothesis Vc: There is no significant statistical difference between the job characteristics-job satisfaction relationships resulting from the interaction of the need for personal growth with the conformity dimension of organizational climate.

This hypothesis is intended to test the interactive effect between the level of NPG and the level of conformity dimension of organizational climate (the degree of constraint to follow the rules and regulations) on the correlation coefficients for the job characteristics-job

satisfaction relationship. From Table LI, we can identify the three coefficients that changed notably because of the effect of the

TABLE L
SIGNIFICANCE OF DIFFERENCES BETWEEN CORRELATIONS FOR THE
JOB CHARACTERISTICS (MPS)-JOB SATISFACTION
RELATIONSHIP FOR GROUPS WITH LOW, MEDIUM,
AND HIGH RESPONSIBILITY CLIMATE

Level of Need for Growth	Z for Difference Between Low & Medium	Medium & High	Low & High
Low	1.638	.240	1.095
Medium	-.221	.110	.101
High	2.443*	-1.878	.553

* $p < .05$

interaction. The first is the correlation coefficient for the group with high-level NPG and low-level conformity; it decreased from .561 to .245. The second is the coefficient for the group with high-level NPG and high-level conformity; it increased from .561 to .617. The third is the correlation coefficient for the group with low-level NPG and high-level conformity; this coefficient increased from .490 to .524. These changes indicate that when managers were highly constrained to follow the rules and regulations in their agencies, job characteristics became an important factor in determining their job satisfaction, especially for the group with high-level NPG. On the other hand, with a low level of conformity, the importance of job characteristics decreased as a determinant of job satisfaction.

The z scores in Table LII reveal the statistical significance of the differences between the correlation coefficients of the groups with

different levels of responsibility. The only significant change in the correlations appeared between the group with low-level and the group with high-level conformity climate for the high-NPG managers at a .01

TABLE LI

THE CORRELATIONS BETWEEN JOB CHARACTERISTICS AND JOB SATISFACTION
MODERATED BY THE INTERACTION EFFECT OF CONFORMITY CLIMATE
WITH THE INDIVIDUAL NEED FOR GROWTH

Need for Growth	The Level of Conformity						Total	
	Low N	r	Medium N	r	High N	r	N	r
Low	63	.360	70	.375	67	.524	200	.490
Medium	54	.378	87	.419	85	.374	226	.430
High	56	.245	54	.468	79	.617	189	.561
TOTAL	173	.333	221	.415	231	.499	615	.487

level. The remaining changes in the coefficients were not statistically significant. Therefore, the hypothesis suggesting no significant impact of the interaction between the conformity climate and NPG on the relationship was partly rejected.

Hypothesis Vd: There is no significant statistical difference between the job characteristics-job satisfaction relationships resulting from the interaction of the organizational identification dimension of organization climate and the need for personal growth.

This hypothesis is intended to determine the interactive effect between the level of managers' NPG and the level of organizational identification (the sense of pride and personal loyalty toward their agencies) on the correlation coefficients for the job characteristics-job satisfaction relationship. Table LIII shows the correlation

coefficients resulting from the interaction of the two variables. The first correlation coefficient that we can recognize from the table is

TABLE LII
SIGNIFICANCE OF DIFFERENCES BETWEEN CORRELATIONS FOR THE
JOB CHARACTERISTICS (MPS)-JOB SATISFACTION
RELATIONSHIP FOR GROUPS WITH LOW, MEDIUM,
AND HIGH CONFORMITY CLIMATE

Level of Need for Growth	z for Difference Between Low & Medium	Medium & High	Low & High
Low	-.095	-1.063	-1.147
Medium	-.270	.348	.033
High	-1.326	-1.144	-2.610**

** $p < .01$

for the group with a high level of NPG and a low level of organizational identification. This correlation coefficient increased from .561 to .655, which is the highest of all the correlation coefficients. The second is the correlation coefficient for the group with a high level of NPG and a high level of organizational identification. This coefficient declined from .561 to .280, which is the lowest of all the correlation coefficients. The differences in the remaining coefficients were not particularly notable.

These results indicate that when the high-level NPG managers felt they did not have much pride and personal loyalty toward their agencies, job satisfaction was strongly determined by their job characteristics. When they felt a high level of pride and personal loyalty toward their agencies, the strength of the relationship was reduced and job characteristics were less important as sources of job satisfaction. On

the other hand, the low-level and medium-level NPG managers were not strongly influenced by the levels of organizational identification climate in determining the sources of their job satisfaction.

TABLE LIII

THE CORRELATIONS BETWEEN JOB CHARACTERISTICS AND JOB SATISFACTION
MODERATED BY THE INTERACTION EFFECT OF ORGANIZATIONAL
IDENTIFICATION CLIMATE WITH THE INDIVIDUAL
NEED FOR GROWTH

Need for Growth	The Level of Organizational Identification							
	Low N	r	Medium N	r	High N	r	Total N	r
Low	62	.365	73	.344	63	.331	199	.490
Medium	64	.301	81	.412	77	.379	222	.430
High	66	.655	52	.365	72	.280	190	.561
TOTAL	192	.451	206	.372	212	.316	610	.487

The z scores in Table LIV reveal the significant changes in the correlations for the job characteristics-job satisfaction relationship resulting from the interaction between organizational identification and NPG. The significant differences between the correlations occurred only for the high-NPG managers. So, the relationship was significantly different between the group with low-level and the group with medium-level organizational identification climate at a .05 level, and between the group with low-level and the group with high-level organizational identification climate at .01 level. The remaining differences in correlations were not significant. Therefore, the hypothesis postulating no significant impact of the interaction of organizational

identification climate and NPG on the job characteristics-job satisfaction relationship was partly rejected.

TABLE LIV
SIGNIFICANCE OF DIFFERENCES BETWEEN CORRELATIONS FOR THE JOB CHARACTERISTICS (MPS)-JOB SATISFACTION RELATIONSHIP FOR GROUPS LOW, MEDIUM, AND HIGH ORGANIZATIONAL IDENTIFICATION CLIMATE

Level of Need for Growth	Z for Difference Between Low & Medium	Between Medium & High	Low & High
Low	.131	.096	.218
Medium	-.772	.259	.520
High	2.110*	.537	2.850

** p.<.01 * p<.05

Hypothesis Ve. There is no significant statistical difference between the job characteristics-job satisfaction relationships resulting from the interaction of the organizational clarity dimension of organization climate and the need for personal growth.

This hypothesis is intended to test the interactive effect of the level of organizational clarity climate (clarity of responsibility, rules, and the process of decision-making) and the level of NPG on the correlation coefficients for the job characteristics-job satisfaction relationship. As shown in Table LV, the most notable changes in the coefficients occurred for the group with a high level of organizational clarity. First, the interaction between the low and medium levels of NPG and the high level of organizational clarity caused the correlation coefficients to decrease quite significantly. Thus, the correlation coefficient dropped from .490 to .249 for the group with a low level of

NPG and a high level of organizational clarity, and it dropped from .430 to .209 for the group with a medium level of NPG and a high level of organizational clarity. However, the decrease in the correlation coefficient for the group with a high level of NPG and a high level of organizational clarity was not very large; the coefficient dropped from .561 to .416. On the other hand, the correlation coefficients increased for the groups with low and medium levels of NPG and a medium level of organizational clarity. Thus, the correlation coefficient increased from .490 to .525 for the group with a low level of NPG and a medium level of organizational clarity, and it increased from .430 to .483 for the group with a medium level of NPG and a medium level of organizational clarity.

In general, this table shows that the degree of clarity of the agencies' policies and organizational processes was an important moderating factor for determining the source of job satisfaction, particularly for the managers with low and medium levels of NPG. When the level of organizational clarity climate was high, job characteristics were less important as determinants of job satisfaction for the low- and medium-NPG managers. However, as the level of organizational clarity decreased, they recognized job characteristics as an important factor in their job satisfaction.

The z scores in Table LVI show the significant differences in the correlation coefficients between the groups with different levels of organizational clarity climate. As we can see from the table, the only significant change in the correlations occurred between the group with

medium-level and the group with high-level organizational clarity climate for the low-NPG managers at a .05 level. The differences in correlation between the groups with medium-level and high-level organizational clarity climate for the medium-NPG managers, and between the group with low-level and the group with high-level organizational

TABLE LV

THE CORRELATION BETWEEN JOB CHARACTERISTICS AND JOB SATISFACTION
MODERATED BY THE INTERACTION EFFECT OF ORGANIZATIONAL CLARITY
WITH THE INDIVIDUAL NEED FOR GROWTH

Need for Growth	The Level of Organizational Clarity Climate							
	Low		Medium		High		Total	
	N	r	N	r	N	r	N	r
Low	67	.484	70	.525	64	.249	201	.490
Medium	86	.468	79	.483	62	.209	227	.430
High	73	.505	55	.523	60	.416	188	.561
TOTAL	226	.484	204	.507	182	.289	612	.487

clarity for the medium-NPG managers, were fairly significant ($z=1.832$ and $z=1.747$, respectively), but the differences were not significant at a .05 level. The remaining differences in the correlation coefficients were not significant. Therefore, the hypothesis suggesting no significant impact of the interaction between the level of organizational clarity climate and the level of NPG on the job characteristics-job satisfaction relationship was partly rejected.

Hypothesis Vf: There is no significant statistical difference between the job characteristics-job satisfaction relationships resulting from the interaction of the reward dimension of organization climate and the need for personal growth.

This hypothesis is intended to determine the impact of the interaction between the level of reward dimension of climate -- which indicates the degree of providing reward with encouragement and recognition when managers performed well -- and the level of NPG on the correlation coefficients for the job characteristics-job satisfaction

TABLE LVI

SIGNIFICANCE OF DIFFERENCES BETWEEN CORRELATION FOR THE JOB CHARACTERISTICS (MPS)-JOB SATISFACTION RELATIONSHIP FOR GROUPS WITH LOW, MEDIUM, AND HIGH ORGANIZATIONAL CLARITY CLIMATE

Level of Need for Growth	Z for Difference Between Low & Medium	Medium & High	Low & High
Low	-.303	1.902*	1.564
Medium	-.126	1.832	1.747
High	-.147	.738	.640

relationship. From Table LVII, we can identify three coefficients which changed substantially because of the interaction. The first is the correlation coefficient for the groups with a low-level of NPG and a high level of regard. This Group's correlation coefficient dropped significantly. Specifically, the correlation coefficient for the group with the low level of NPG and the high level of regard dropped from .490 to .228, which was the lowest of all the correlation coefficients. The second was the correlation coefficient for the group with a low level of NPG and a low level of reward. The correlation coefficient for this group increased notably due to the interactive effect (from .490 to .535). The third was the correlation coefficient for the group with a

high level of NPG and a low level of reward. It increased from .561 to .585, which was the highest of all the correlation coefficients. Generally speaking, the low-NPG managers most sensitively reacted to the level of reward climate. When they felt that they received adequate rewards from their agencies, they did not consider job characteristics to be important determinants of job satisfaction. But when the managers with low NPG perceived that they did not receive enough rewards for their performance, their job satisfaction was strongly determined by job characteristics.

The z scores in Table LVIII reveal the significance of differences between the correlation coefficients of the groups with different levels of reward climate. As we can see from the table, the differences in the correlations between the group with low-level and high-level reward climate for the low-NPG managers show some degree of significance, but the difference was not significant at a .05 level; also, no other differences in the coefficients were significant at a .05 level. Therefore, the hypothesis suggesting no moderating impact of the interaction of the two variables on the job characteristics-job satisfaction relationship was accepted.

Hypothesis Vg. There is no significant statistical difference in the job characteristics-job satisfaction relationships resulting from the interaction of the risk dimension of organizational climate and the need of personal growth.

The impacts of the interaction between the level of risk -- the degree to which the agency supports managers' personal risk-taking in

TABLE LVII

THE CORRELATION BETWEEN JOB CHARACTERISTICS AND JOB SATISFACTION
MODERATED BY THE INTERACTION EFFECT OF REWARD CLIMATE
WITH THE INDIVIDUAL NEED FOR GROWTH

Need for Growth	The Level of Reward Climate						Total N r	
	Low N	r	Medium N	r	High N	r		
Low	45	.535	92	.425	59	.228	196	.490
Medium	69	.360	92	.430	61	.384	222	.430
High	61	.585	71	.459	54	.484	186	.561
TOTAL	175	.494	255	.437	174	.342	604	.487

TABLE LVIII

SIGNIFICANCE OF DIFFERENCES BETWEEN CORRELATIONS FOR THE
JOB CHARACTERISTICS (MPS)-JOB SATISFACTION RELATIONSHIP
FOR GROUPS WITH LOW, MEDIUM, AND HIGH REWARD CLIMATE

Level of Need for Growth	Z for Difference Between		
	Low & Medium	Medium & High	Low & High
Low	.764	1.294	1.779
Medium	-.512	.317	-.161
High	.971	-.179	.733

making decisions and performing their work -- and the level of NPG on the correlation coefficient for the job characteristics-job satisfaction relationship were tested through this hypothesis. The first significant coefficient from Table LIX is the correlation coefficient for the group with a low level of NPG and a high level of risk climate. This coefficient increased significantly from .490 to .617, which is the highest of all the correlations. In contrast, the correlation coefficient for the group with a medium level of NPG and a high level of

risk decreased from .430 to .344, which is the lowest of all the correlations in the table. The next notable change is the one in coefficients for the groups with medium and high levels of NPG and a low level of risk-taking climate. As a result of the interaction of the two variables, the correlation coefficient increased from .430 to .512 for the group with a medium level of NPG and a low level of risk climate, and it increased from .561 to .602 for the group with a high level of NPG and a low level of risk climate dimension.

These alterations in the correlation coefficients indicate that no clear interaction pattern existed. That is, interestingly enough, the satisfaction of low-NPG managers with a high level of risk-taking climate was strongly determined by job characteristics. Meanwhile, the medium-NPG managers with a high level of risk-taking climate did not consider job characteristics as an important source of job satisfaction. However, with a low level of risk-taking climate, the medium-level and high-level NPG managers considered job characteristics as important determinants of job satisfaction.

The z scores in Table LX reveal the significance of the differences between the correlation coefficients of the groups with different levels of risk climate. As we can see from the table, the changes in correlation coefficients between the groups were not significant enough to prove the moderating impact of the interaction of the two variables on the job characteristics-job satisfaction relationship. Therefore, the hypothesis postulating no impact of the interaction between risk climate and NPG on the relationship was accepted.

Hypothesis Vh: There is no significant statistical difference between the job characteristics-job satisfaction relationships resulting from the interaction of the warmth dimension of organizational climate and the need for personal growth.

TABLE LIX

THE CORRELATION BETWEEN JOB CHARACTERISTICS AND JOB SATISFACTION
MODERATED BY THE INTERACTION EFFECT OF RISK CLIMATE
AND THE INDIVIDUAL NEED FOR GROWTH

Need for Growth	The Level of Risk Climate						Total N r	
	Low N	r	Medium N	r	High N	r		
Low	59	.448	114	.476	23	.617	196	.490
Medium	73	.512	123	.356	27	.344	223	.430
High	79	.602	79	.472	29	.498	187	.561
TOTAL	211	.528	316	.424	79	.486	616	.487

TABLE LX

SIGNIFICANCE OF DIFFERENCES BETWEEN CORRELATIONS FOR THE
JOB CHARACTERISTICS (MPS)-JOB SATISFACTION RELATIONSHIP
FOR GROUPS WITH LOW, MEDIUM, AND HIGH RISK CLIMATE

Level of Need for Growth	Z for Difference Between		
	Low & Medium	Medium & High	Low & High
Low	.195	-.855	-.923
Medium	1.326	.048	.889
High	1.135	-.084	.727

Through this hypothesis, the impacts of the interaction of the level of warmth dimension of climate -- which is the prevalent sense of friendliness in an agency -- and the level of NPG on the correlation

coefficient for the job characteristics-job satisfaction relationship were tested. As we can see from Table LXI, the major impact of the interaction occurred for the group with a high level of NPG. When the high-NPG managers perceived that the organizational climate had a high level of warmth, the correlation coefficient declined from .561 to .294. In contrast, the correlation coefficient increased significantly for the group with a high level of NPG and a medium level of warmth (from .561 to .638) and moderately for the group with a high level of NPG and a low level of warmth (from .561 to .584).

Another notable interactive effect occurred for the group with a low level of NPG and a high level of warmth. For them, the correlation coefficient dropped from .490 to .277, which is the lowest coefficient in the table. In general, for the group of managers who perceived their organizational climate as very warm, job characteristics were less important as determinants of job satisfaction. On the other hand, when they felt their organizational climate was not very warm, job characteristics were recognized as an important source of job satisfaction.

Through z scores in Table LXII, we can determine the significance of the difference between the coefficients for the job characteristics-job satisfaction relationships of the groups with different levels of warmth climate. First, for the high-NPG managers, the relationship was significantly different between the groups with a medium level and a high level of warmth climate at a .01 level, and between the groups with a low level and a high level of warmth climate at a .05 level. Second,

for the low-NPG managers, the differences in the correlations were fairly significant between the groups with a medium level and the high level of warmth climate ($z=1.847$) even though it was not significant at a .05 level. The remaining differences between the correlations were not significant. Therefore, the hypothesis postulating no moderating impact of the interaction on the relationship was partly rejected.

TABLE LXI

THE CORRELATIONS BETWEEN JOB CHARACTERISTICS AND JOB SATISFACTION
MODERATED BY THE INTERACTION EFFECTS OF THE WARMTH
DIMENSION OF ORGANIZATIONAL CLIMATE WITH
THE INDIVIDUAL NEED FOR GROWTH

Need for Growth	The Level of Warmth Climate						Total	
	Low N	r	Medium N	r	High N	r	N	r
Low	63	.478	59	.505	76	.227	198	.490
Medium	72	.412	80	.349	71	.356	223	.430
High	59	.584	61	.638	69	.294	189	.561
TOTAL	194	.490	200	.484	216	.287	610	.487

In summary, the effect of the significant statistical interaction of each dimension of organizational climate and the need for personal growth on correlation coefficients for the job characteristics-job satisfaction relationship was tested with eight different null hypotheses. The hypotheses postulating no significant effect of the interaction between the NPG and reward climate and between the NPG and risk climate on the relationship were accepted but partly rejected for no effect of the interaction between the NPG and risk climate on the

TABLE LXII
SIGNIFICANCE OF DIFFERENCES BETWEEN CORRELATIONS FOR THE
JOB CHARACTERISTICS (MPS)-JOB SATISFACTION RELATIONSHIP
FOR GROUPS WITH LOW, MEDIUM, AND HIGH WARMTH CLIMATE

Level of Need for Growth	Z for Difference Between Low & Medium	Medium & High	Low & High
Low	-.1770	1.847	1.690
Medium	.430	-.036	.382
High	-.475	2.522**	2.022*

relationship were accepted, but partly rejected for no effect of the interaction between the NPG and the job pressure, responsibility, conformity, organizational clarity, and warmth dimensions of climate on the relationship. In general, the most significant effect of the interaction occurred for the high-NPG managers. The effect of the interaction also showed the low-NPG managers were sensitive to the organizational clarity, rewards, and warmth dimensions of climate. The significant differences mostly appeared either between the groups with a high level and a low level of climate or between the groups with a high level and a medium level of climate.

SUMMARY OF RESULTS

In general, based on the frequency distribution of the respondents, the managers in Oregon State Government might be described as married white males or females who are 30 to 50 years old. They hold either associate degree or bachelor degrees. They have stayed in their current positions for 1 to 5 years and served in their current agencies

for more than five years as either first-line supervisors or middle managers.

According to the factor analysis, eight different dimensions of organizational climate were identified for the state agencies. Those dimensions were job pressure, responsibility, conformity, organizational identification, rewards, organizational clarity, risk, and warmth.

From testing the five research hypotheses, the following results were found.

Hypothesis I, suggesting a stronger relationship between job characteristics and job satisfaction than between job context factors and job satisfaction, was rejected.

Hypothesis II, suggesting no significant relationship between job satisfaction and demographic factors (age, gender, dependents, marital status, race, education, current position, years in current position, and years in current agency), was accepted for all of the factors except education.

Hypothesis III, suggesting a stronger relationship between job characteristics and job satisfaction for the group with high NPG than for the group with low NPG, was partly accepted.

Hypothesis IV, postulating no statistically significant moderating effects of the dimensions of organizational climate on the correlation coefficients for the job characteristics-job satisfaction relationship, was accepted for the risk and responsibility dimensions, rejected for the organizational clarity dimension, and partly rejected for the job pressure, conformity, organizational identification, reward, and warmth dimensions.

Hypothesis V, postulating no statistically significant interactive effects of the need for personal growth (NPG) and the dimensions of organizational climate on the correlation coefficients for the job characteristics-job satisfaction relationship, was accepted for the significant effect of the interaction between the NPG and reward climate and between the NPG and risk climate on the relationship, and partly rejected for the effect of the interaction between the NPG and the job pressure, responsibility, conformity, organizational clarity and warmth dimensions of climate on the relationship.

CHAPTER VI

OVERVIEW, CONCLUSIONS, AND RECOMMENDATIONS

This chapter contains an overview of the study, conclusions and significance of the findings, and recommendations for the state agencies and for further study.

OVERVIEW OF THE STUDY

The main purpose of this study was to explore the relationship between job characteristics and job satisfaction and the impact of organizational climate on that relationship in the public sector. The managers in Oregon State Government were the population for this study.

Considerable research on the broad topic of job satisfaction suggests that public sector managers have less job satisfaction, motivation, and commitment to their work than do their counterparts in the private sector. Researchers generally agree that organizational climate and a lack of motivation intrinsic to one's job (job characteristics) are the major problematic factors contributing to decreased job satisfaction in the public sector.

Since Herzberg's (1959) two-factor theory of job satisfaction and motivation, a large number of studies have investigated the relationship between job characteristics and job satisfaction. The significance of the relationship and the importance of the impact of the strength of need for personal growth (NPG) on that relationship have been tested and accepted. However, few empirical studies have been undertaken to

investigate the impact of organizational climate on the job characteristics-job satisfaction relationship.

The objectives that guided this study, stated in the form of research questions were: (1) What are the relationships between job characteristics, job context factors and job satisfaction of state managers? (2) Is job satisfaction among state managers related to certain demographic variables? (3) What are the impacts of the strength of need for personal growth on the job characteristics-job satisfaction relationship? (4) What are the impacts of organizational climate on the job characteristics-job satisfaction relationship? (5) Are there any effects of the interaction between organizational climate and individual need for personal growth? If so, what is the impact of the interaction on the job characteristics-job satisfaction relationship?

This study was conducted by the use of a survey. Before the survey began, with assistance from the State Management Association, Dr. Ellis and this researcher held several meetings to discuss the research objectives and attended the agency head meeting to explain the purpose of the study in order to ensure a high participation rate. As a result, 656 managers responded to the questionnaires, and the response rate reached 66 percent. The questionnaire consisted of four parts. The first part, which was drawn from Litwin and Stringer's Organizational Climate Questionnaire, was used to collect data about organizational climate. The second part was drawn from Hackman and Oldham's Job Diagnostic Survey. This part was used to collect data about managers' job characteristics, their job satisfaction, and their strength of need for personal growth. The third part was Cornell's Job Descriptive Index,

which was used to measure managers' job context factors. The last part was used to collect data about managers' demographic factors.

Several statistical methods were used to analyze the data. Cronbach's alpha was used to test reliability, and factor analysis was used to identify the dimensions of organizational climate. Pearson's correlation was used to determine the strength of the job characteristics-job satisfaction relationship. Chi-square and z scores were used to test the significance of the difference between correlations. Subgroup methods were used to determine the moderating effects of NPG, organizational climate, and the interactive effect of the two variables on the job characteristics-job satisfaction relationship. Finally, multiple regression was used to compare the strength of the job characteristics-job satisfaction relationship with the strength of the job context factors-job satisfaction relationship.

Even if some of the findings did not support the research hypotheses, the results of this study provided very important information to facilitate understanding of the job characteristics-job satisfaction relationship.

CONCLUSIONS

Before the relationship between job characteristics and job satisfaction was investigated, as background information, the strength of the job characteristics-job satisfaction relationship was compared with that of the job context factors-job satisfaction relationship, and the relationships between job satisfaction and demographic factors were examined. The results tended to contradict some of the earlier

research, suggesting that job context factors (such as supervision and relationships with co-workers) were more important factors for determining managers' job satisfaction than factors intrinsic to their jobs (such as task significance, skill variety, task identity, autonomy, and feedback). Also, the findings regarding the relationship between job satisfaction and demographic factors showed that only the level of education had a significant impact on the level of job satisfaction. Up to a bachelor's degree, as the level of education increased, the level of job satisfaction increased, but the level of job satisfaction decreased as the level of education went up further to a master's degree.

In general, the results of this study indicated that the relationship between job characteristics and job satisfaction was not a simple one. First of all, in a finding that was consistent with those of previous research, this study showed that the relationship was moderated by the need for personal growth (NPG), so the relationship was stronger for the high-NPG managers than for the low-NPG managers. The more enriched a job is, the more likely the high-NPG manager is to be satisfied with that job.

One of the unique findings of this research was the impact of organizational climate on the job characteristics-job satisfaction relationship. One might assume that job enrichment intervention would bring about the best results when the employees feel that the working environment is favorable for performing their work. Thus, when the employees feel warmth and rewards in their working environment and when they feel pride and personal loyalty toward their agencies, the enriched

job characteristics would be most effective in enhancing the employees' satisfaction. As a result, the relationship between job characteristics and job satisfaction would become stronger. However, this study provided totally opposite results. As we discovered in Chapter V, the relationship between job characteristics and job satisfaction was stronger for the managers who perceived the dimensions of organizational climate to be negative than for the managers who perceived them to be positive. As an example, the relationship was stronger for the managers with low levels of warmth, reward, and responsibility than for the managers with high levels of warmth, reward, and responsibility. This finding indicates that a negative organizational climate does not prevent employees from obtaining satisfaction from job characteristics actually, it stimulates the employees to be aware of the importance of the outcomes which result from the intrinsic factors (such as feelings of meaningfulness, achievement, and competence).

Another interesting finding was that, of the eight dimensions of organization climate, only two dimensions -- risk and responsibility -- which were related to power distribution failed to show a significant moderating effect on the relationship. When the other six dimensions of climate were perceived to be favorable by the managers, job characteristics were not strongly related to their job satisfaction. In other words, with favorable perceptions toward these dimensions of climate in their agencies, the managers obtained their satisfaction from sources other than factors intrinsic to their work. However, with the risk and responsibility dimensions of climate, this was not true. When the managers felt that their agencies highly supported personal risk-

taking for the success of the agencies and that management gave them major responsibility to make decisions and to solve problems, the strength of the relationship was somewhat reduced, but the degree of the decline was not significant. This finding indicates that in a climate that strongly supports taking risks and making decisions, the factors intrinsic to the work are still important determinants of job satisfaction. In other words, a climate with a high level of risk-taking and responsibility does not prevent managers from obtaining satisfaction from the factors intrinsic to their jobs, but it can foster an environment that recognizes intrinsic factors as important sources for job satisfaction.

Another interesting finding was the relationship between task significance and job satisfaction, and the impact of organizational climate on this relationship. First of all, the relationship of task significance to job satisfaction was not very strong compared to other variables' relationships to job satisfaction. Also, in contrast to other job characteristics' variables, this relationship to job satisfaction was strong when the managers were satisfied with the organizational climate dimensions, but the relationship was weak when they were uncomfortable with their working environments. As an example, for the managers with a high level of organizational identification (a feeling of belonging to the agency and pride in the agency), the relationships between the four job characteristics -- skill variety, task identity, autonomy, and feedback -- and job satisfaction were very weak, but the relationship between task significance and job satisfaction was strong. This was true in relation to other dimensions

as well. This finding indicates that, when the managers are satisfied with their work environments, significant tasks become an important determinant of their job satisfaction; but when the climate is not favorable to them, they try to avoid significant work.

This study also provided significant evidence of the interactive effect of the relationship between NPG and organizational climate on the job characteristic-job satisfaction relationship. First of all, generally, the high-NPG managers were most sensitive to their organizational climate, and the relationship between job characteristics and job satisfaction changed significantly for them according to the level of climate. The most notable interactive effects were found in two situations. One was when the high-NPG managers perceived their organizational climate to be negative. In such cases, the strength of the job characteristics-job satisfaction relationship increased significantly for them. The other situation was when they perceived their organizational climate to be strongly positive. In such cases, the strength of the relationship declined dramatically for them. This finding is somewhat consistent with Loher, Noe, Moller, and Fitzgerald's (1985) observation of their analysis of the relationship of job characteristics to job satisfaction. They postulated that the high-NPG people might recognize or care about the opportunities the enriched jobs offered, but the low-NPG people might not recognize or care about these opportunities so it was necessary to provide certain external supports for them.

Another important piece of information from the findings was that the managers with a low level of NPG were also sensitive to certain

dimensions of organizational climate, and the consequence of the interaction with these dimensions created a strong impact on the job characteristics-job satisfaction relationship. The dimensions were organizational clarity, reward, and warmth. When the managers were very satisfied with these two dimensions of climate, the strength of the relationship was reduced dramatically. In other words, when the managers with a low level of NPG felt that their agencies' policies and organizational processes were clear, when they felt warmth in their agencies, and when they felt that they received adequate rewards for their good performance, they considered job characteristics to be less important than any other factors as determinants of job satisfaction; but when these three dimensions were not favorable to them, they considered job characteristics to be an important factor for job satisfaction, so the relationship of these two variables became fairly strong. This finding indicates that the managers with a low-level of NPG are sensitive to the environment and that this sensitivity is related to factors extrinsic to their work such as co-workers, rewards, and simplicity of the work.

Finally, interestingly enough, organizational clarity of climate was the only dimension that significantly moderated the job characteristics-job satisfaction relationship. Also, this dimension was the one dimension that showed a significant interaction with low-NPG managers. This finding indicates that changes in the level of clarity dimension of climate have a critical impact on the relationship, particularly for the low-NPG managers. When the clarity of policy and authority to make decisions in an agency were perceived to be at a

medium level, job characteristics were recognized as important determinants of job satisfaction. But with a very clearly structured climate, the importance of job characteristics as a source of job satisfaction declined significantly. This finding suggests that, in a highly structured bureaucratic system, managers' needs for intrinsic factors are thwarted and they do not seek to satisfy these needs.

SIGNIFICANCE OF THE FINDINGS

One of the most significant findings of this study from a theoretical standpoint was the moderating effect of organizational climate on the job characteristics-job satisfaction relationship. The theoretical model of this relationship included the need for personal growth (NPG) as a moderator of the relationship, but the impact of organizational climate on the relationship and on the need for personal growth has not been investigated empirically. The results of this study suggest that organizational climate should be included in the theoretical model, not only because it has a significant impact on the relationship but also because it interacts with the individual need for personal growth. Thus, the level of NPG can have different moderating effects on the relationship, depending on the situation of organizational climate. As an example, when managers with high NPG felt that their agencies required them to follow rigid rules and regulations in performing their work, the relationship between job characteristics and job satisfaction was enhanced substantially; but when managers with high NPG felt that they were not constrained with bureaucratic rules, the strength of the relationship declined dramatically.

It is very important to note that this study provides empirical data which can prove to be a critical link between the macro level and the micro level in organizations. The macro level of organizational climate can obstruct the employees from obtaining outcomes from the micro level of job characteristics. The employees may not have been aware of certain valued outcomes due to organizational climate or may have actually failed to receive the outcomes. The proposed obstruction may be either positive or negative. With a highly favorable organizational climate, job characteristics may not be of great importance to the employees. In an unfavorable organizational climate, job characteristics may become the focus of the managers' attention and thus divert their attention from other factors that create dissatisfaction.

These findings regarding the impact of organizational climate characteristics on the job characteristics-job satisfaction relationship partly challenge Herzberg's two-factor theory of job satisfaction. As we discussed in Chapter II, Herzberg's two-factor theory suggested that hygiene factors only help to reduce dissatisfaction and that motivators/satisfiers are actual determinants of job satisfaction. According to these findings, the determinants of job satisfaction cannot be comprehensively understood without reference to the working environment. When employees are satisfied with their working environment, job context factors -- especially supervision and relationships with co-workers -- can become important satisfiers; but when the working environment is adversarial for performing jobs, then job characteristics become important factors for job satisfaction. The

reason that the results of this study show a stronger relationship between job context factors and job satisfaction than between job characteristics and job satisfaction may be partly that a favorable working environment keeps managers from becoming very concerned with outcomes resulting from intrinsic factors.

The findings of this study have very important applied value through their implications for organizational change theory. First, the findings suggest that job enrichment intervention is an appropriate change strategy only when the employees reveal strong discontent with their working environment. In other words, under "normal" circumstances, when organizational systems are operating relatively smoothly, job enrichment intervention will not create much of an impact on improving the quality of employees' work life. Second, job enrichment intervention is most likely to be effective for the high-NPG managers. However, this study suggests that a practitioner who is considering job enrichment intervention can also bring about effective outcomes for the low-NPG managers by investigating their perception of the warmth, reward, and organizational clarity dimensions of organizational climate. As we already discussed, job characteristics were identified as important determinants of job satisfaction when low-NPG managers were not satisfied with the organizational clarity and warmth dimensions of organizational climate.

In general, this finding indicates that for job enrichment intervention to be successful, the practitioners have to carefully examine job characteristics, individual differences, and the working environment together and build a system in which these three factors all

support each other. In other words, job enrichment intervention is a way of managing the entire work environment rather than a technical process of improving an undesirable aspect of a job.

Finally, from the findings of this study, we can identify some of the problematic factors that can be changed to improve the levels of job satisfaction and motivation in the public sector. When an organizational climate is unfavorable, job autonomy, feedback, and task identity are important determinants of job satisfaction. In contrast, task significance is an important determinant of job satisfaction when the organizational climate is favorable. Public sector managers perceive their jobs as very significant (actually, over 70 percent of the state managers scored over six from the score range of 1 through 7). In order for job significance to be considered an important source of job satisfaction, the organizational climate must be favorable. On the other hand, under favorable working conditions, employees do not consider other factors intrinsic to their jobs to be important sources of job satisfaction. These contradictions in the relationship between job characteristics and organizational climate in the public sector may be a hindrance to improving the level of job satisfaction and motivation in that sector.

RECOMMENDATIONS

Two different recommendations can be made from the findings and conclusions of this study. The first is a general recommendation for improvements and positive changes in job characteristics and the quality of work life of the State Government managers. The second is a

recommendation for further study in the area of organizational climate and job characteristics.

General Recommendations

Before general recommendations could be made, the mean scores for the state managers were compared with the mean scores for national norms (mostly from the private sector) in order to obtain an objective view of the state managers' perceptions and attitudes toward their jobs and their agencies. As Table LXIII shows, we can see that the level of job satisfaction of Oregon State managers is higher than that of managers in other organizations. Also, they perceive that their jobs contain a relatively high potential for facilitating job satisfaction and motivation.

Meanwhile, of the four job characteristics, only the mean score of feedback is lower than that of the national norm. This result indicates that the state managers generally feel that they do not have enough opportunities to obtain direct and clear information about the effectiveness of their performance. This situation might be a result of the characteristics of public sector organizations, which we discussed in Chapters I and II.

Of the four job context variables, the state managers appear to have relatively high satisfaction with their pay and promotion factors. However, the degrees of satisfaction with supervision and co-workers are lower than those of employees in other organizations. This finding suggests that management in state government should pay more careful

attention to the human relationship factor to promote higher job satisfaction and motivation.

Since the national norms for organizational climate factors are not available, it is not possible to make an overall judgement about the state agencies' organizational climates in comparison with other organizations. However, from Table LXIII we can ascertain that the mean scores of the reward and responsibility dimensions are relatively lower than those of the other dimensions. This finding shows that the state managers perceive that their top management does not provide enough recognition and encouragement for their good performance; also, they feel that they are not given enough responsibility to deal with problems and to make decisions.

In summary, on the basis of Table LXIII, we can conclude that the state managers are relatively satisfied with their jobs and they feel that their job characteristics are adequate to provide them with intrinsic motivation and satisfaction. Also, they feel that their promotion and pay system are satisfactory. However, they perceive that they do not receive adequate recognition and support from their top management. On the basis of this information and the findings from this study, the following recommendations are suggested.

1. This study suggests that, for the State Government to help its managers to pursue personal growth and experience feelings of meaningfulness and achievement while performing their jobs, each agency's top management has to create an organizational climate that provides managers with a strong sense of responsibility for making decisions and solving problems. It is also important to maintain a

TABLE LXIII
THE MEAN SCORES FOR THE VARIABLES
FOR OREGON STATE MANAGERS AND FOR NATIONAL NORMS

Variables	Mean Scores for Oregon State Managers	Mean Scores for National Norm
Task Significance	6.10	5.8
Skill Variety	6.08	5.6
Task Identity	4.99	4.7
Job Autonomy	5.77	5.4
Feedback	5.15	5.2
Need for Personal Growth	4.56	4.7
Job Satisfaction	5.17	4.9
MPS	179.00	156.0
Work	38.95	38.0
Pay	31.56	30.0
Promotion	20.31	18.0
Supervision	42.32	44.0
Co-Workers	43.50	46.0
Job Pressure	2.61	
Responsibility	2.30	
Conformity	2.58	
Organ. Identification	2.79	
Reward	2.15	
Organ. Clarity	2.87	
Risk	2.51	
Warmth	2.88	

moderate degree of organizational clarity. When an organization's processes, planning, and policies are very clear, the managers' desire for challenge and pursuit of self-development are reduced dramatically; so a moderate degree of organizational clarity is an important factor for stimulating the managers to pursue success for the agency and for themselves.

2. According to this study, relationships with co-workers and treatment by supervisors are the most important determinants of job satisfaction for the state managers. For improvement of managers' job

satisfaction, team-building exercises and interpersonal conflict-resolution intervention are strongly recommended for use before any other intervention methods are considered.

3. The findings suggest that major restructuring of managers' jobs is not necessary. If an agency is considering any kind of redesign of managers' jobs, it should pay attention to how it can structure the jobs to include the feedback factor so that the managers can receive clear and direct information about the effectiveness of their performance.

4. As we can see from Table LXIII, in comparison with the national norm, the state managers' strength of need for personal growth is weaker than that of managers in other organizations. A special program for the managers with a low level of need for personal growth is recommended so that they can also use the opportunities that the high-motivational-potential jobs offer to experience self-growth, feelings of meaningfulness, and achievement. Programs such as educational opportunities, work groups, or management support for the low-NPG managers are recommended.

Recommendations for Further Study

1. The factors that determine managers' job satisfaction in the public sector should be further investigated. Nalepka (1985) also found that treatment by supervisors and relationships with co-workers were the most important factors for determining nurses' job satisfaction. To improve understanding of the determinants of job satisfaction, it is necessary to explore how the macro level of organizational factors (such as organizational climate) influences job satisfaction.

2. We postulated that organizational climate moderated the job characteristics-job satisfaction relationship because the environmental factors have impacts on employees' perceived outcomes and their expectations of achieving these outcomes. But further empirical research is needed to understand why the moderating effects occur and what the processes of the moderating effects are on individual behavior.

3. We found that the managers who were content with their working environment were less likely to derive job satisfaction from job characteristics. Further research is recommended to explore the determinants of job satisfaction and motivation for the employees with favorable perceptions of their working environment.

4. Further investigation of the impacts of organizational climate on behavioral outcomes such as performance and absenteeism is recommended. In particular, investigation of the differences in the level of performance between the employees with a favorable climate and the employees with an unfavorable climate would be worthwhile to assess the impacts of the working environment on actual work-related individual behavior.

5. The casual link between job characteristics and the outcome variables (such as motivation, performance, and absenteeism) is uncertain. This study suggests that the relationship between job characteristics and the outcome variables is subject to change depending on the working environment. So far, most of the job characteristics research studies have been cross-sectional. To investigate the casual effects of job characteristics on the outcome variables, a field experimental design is recommended. Through the experimental design,

which would eliminate the impacts of other factors, the casual relationship between job characteristics and satisfaction, performance, and motivation could be explored.

6. The replication of this study in other work settings, such as those of the private sector and low-status employees in state government, are recommended. The comparison between the results of this study and the results of the study of either private sector managers or state employees who are not in managerial positions would provide us with very useful information for understanding the difference between the public sector and the private sector, as well as the differences between the managers' perceptions of their jobs and organizations and the perceptions of low-level state employees. Also, this study could be replicated to investigate each agency separately, to determine whether there is an agreement on climate perceptions among the members in each organization. This study would allow us to compare each organizational climate as well as the differences in perceptions within each organization.

Finally, one important consideration concerning replication of this study is addressed in the set of questions about the need for personal growth in Section Five of the questionnaire. To measure the strength of the need for growth, the JDS included two different formats; one was the "job choice" format and the other was the "would like" format. As we mentioned in the INSTRUMENTS section in Chapter IV, this study used only the "job choice" format because of more accurate reported reliability and validity. The "job choice" format measures "growth need strength" with a five-point scale, which has a neutral

point of Three. One of the reasons for the nonlinear effects of the level of need for personal growth (NPG) on the job characteristics-job satisfaction which resulted in the weakest relationship for the respondents with the medium level of NPG, is that the medium-NPG group does not represent the medium level of NPG but represents indecision in choosing different kinds of jobs. Therefore, in replication, it is preferable to use the two formats together because the "would like" format does not have a neutral point. If both formats were used, an accurate measure of the strength of NPG might be possible.

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APPENDIX A

LETTER OF ENDORSEMENT

Executive Department

155 COTTAGE STREET NE, SALEM, OREGON 97310-0310

DATE: May 7, 1990

TO: State Managers

FROM: Fred D. Miller *Fred Miller*
Director

SUBJECT: State Management Association Survey

The press of day-to-day business tends to keep many of us immersed in assignments. It's easy to lose sight of what keeps our own employees motivated and productive.

The State Management Association (SMA) has developed an attitude and opinion survey with the help of Professor Walt Ellis and student Unuk Song of Portland State University. SMA will use the results of the survey to fine-tune its activities toward meeting more of the identified needs of our workers.

I would appreciate it if each of you would take the time to complete the questionnaire. It is a good opportunity to register your opinion toward your work and workplace and it will disclose important information that can help agencies improve work conditions and productivity.

Agency heads can use the survey, or a variation, in their own agencies to help identify problems or concerns. Favorable results can be shared with others.

I commend SMA for addressing this issue. The results will be useful and interesting as we tackle the human resource management issues of the 90's and beyond.

FDM:ra
7330j

APPENDIX B

INFORMED CONSENT

INFORMED CONSENT

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I, _____, hereby agree to serve as a subject in the Oregon State Management Association Survey conducted by Professor Water G. Ellis and Mr. Unsuk Song of Portland State University. I understand that this study, sponsored by the State Management Association, involves answering a written questionnaire related to the perceptions and attitudes that I hold about my job, work environment and job satisfaction. I understand that I am being asked to disclose information about myself, such as age, gender, marital status, number of dependents, salary, ethnicity, and educational attainment. I further understand that participation in the study will require approximately 25 minutes of my time.

It has been explained to me that the purpose of the study is to learn more about the personal characteristics, perceptions on employment in state government, and on-the-job needs of management personnel. This information will be used by the State Management Association to more adequately program training and educational activities. Findings of the study may also provide state government with a better understanding of the characteristics and aspirations of its managers from which to promote desirable changes.

Professor Ellis and Mr. Song have offered to answer any questions I have about the survey and what is expected of me. I have been assured that all information I give will be kept confidential and neither my name nor identity will be used for publication or public discussion purposes.

I understand that I am free to withdraw from participation in this study at any time.

I have read and understand the foregoing information and agree to participate in this study.

DATE _____ SIGNATURE _____

If you experience problems that are the result of your participation in this study, please contact the Chair of the Human Subjects Research Review Committee, Office of Grants and Contracts, 303 Cramer Hall, Portland State University, P.O. Box 751, Portland, Oregon 97207. Telephone: 725-3417.

APPENDIX C

STATE MANAGEMENT ASSOCIATION SURVEY PROJECT

STATE MANAGEMENT ASSOCIATION
SURVEY PROJECT

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To Managers of Oregon State Government:

Earlier this Spring you were sent a survey from Portland State University. As of this date we have not yet received your completed questionnaire. We are asking once again for your participation. The attached questionnaire is designed to elicit your perceptions and attitudes about the organizational climate of your agency, your specific job, and your demographic characteristics. This information is being gathered for the State Management Association to provide a greater understanding of the needs and aspirations of state managers and to strengthen management development programs.

Your name was selected at random from a list provided by the Personnel and Labor Relations Division. Your participation is important to the integrity of the study. We do stress, however, that your participation is voluntary and that you may elect at any time not to participate.

We hope that you will decide to participate and that you will take the time required to fill out the questionnaire and return it promptly according to the attached instructions. Your answers will be held confidential. In order to insure confidentiality, data from this study will be reported only in aggregate form. Individual responses will not be available to your agency. To guarantee confidentiality the completed questionnaires are to be returned directly to Portland State University where the data will be compiled and analyzed. Only the investigators will have access to the completed questionnaires.

The findings from this research will be used not only to provide a data base for the SMA, but also for a doctoral dissertation being written by Mr. Unsuk Song. A copy of the dissertation will be placed in the Portland State University Library. We hope that you will contribute to this important research. If you have any questions as to the purpose of the study, content of the questionnaire, and the uses to which the data will be put, please contact either of the researchers, or the State Management Association.

Please return your completed questionnaire by **July 15, 1990**. Simply fold back the last page and staple it at the designated places with the return address visible. Place the questionnaire in the Interagency Mail System for return to PSU.

We thank you for your cooperation and participation in this study.

Walter G. Ellis, Ph.D.
Professor & Principal
Investigator
Dept. of Public Administration
Portland State University
Telephone: 725-3043; 3920

Mr. Unsuk song
Doctoral Candidate
Co-Principal Investigator
Dept of Public Administration
Portland State University
Telephone: 725-3043; 3920

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