An Investigation of Job Satisfaction among Faculty Members of a Large Multi-purpose University in the Dallas-Fort Worth Metroplex

DISSERTATION

Presented to the Graduate Council of the North Texas State University in Partial Fulfillment of the Requirements For the Degree of Doctor of Philosophy

By

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The purpose of this study was to investigate job satisfaction of full-time faculty members at a large multi-purpose university in relation to gender, rank, and types of activity. The population consisted of 664 full-time faculty members at North Texas State University during the spring semester, 1984. The questionnaire consisted of two parts, the Job Descriptive Index and The Faculty Data Sheet. The theoretical basis of the study was Herzberg's theory of Motivation-Hygiene.

Four types of statistical analysis were used. Multivariate analysis of variance and analysis of variance were employed to analyze the data and test the hypotheses. A multiple comparison procedure, the Scheffe test, was used for the purpose of the follow-up investigation. Factor analysis was applied to data in order to verify the credibility of the Herzberg theory. The independent variables were gender, rank, and types of activity. The predictive values of age, status, and years of experience were calculated with regard to the dependent variables. The dependent variables were the five subsections of the Job Descriptive Index.
Results indicate that there were significant interaction effects between rank and types of activity with regard to opportunities for promotion. Assistant professors who were engaged in research activities had a higher perception of promotion opportunities than did assistant professors in teaching. Younger, nontenured faculty members with 10 years of experience or less were more satisfied with opportunities for promotion than were older, tenured faculty members with more than 10 years of experience. Factor analysis determined that faculty members considered job satisfaction variables as two factors. The two factors were loaded differently from the theory, thus indicating that both motivation and hygiene factors could be sources of job satisfaction.

The following recommendations were made for further research and for the improvement of job satisfaction at North Texas State University. Because the areas of present pay and opportunities for promotion were the most significant predictors of job satisfaction, these areas need more consideration. Further research should attempt to find an appropriate salary procedure, regardless of gender, rank, and types of activity and also to find factors essential to the administration of a fair promotion system.
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Chapter I

INTRODUCTION

In the early history of American colleges and universities, there were not many studies concerning the subject of faculty morale and the related factor of job satisfaction. However, the sources of faculty satisfaction or dissatisfaction can be inferred from the various existing historical documents in the literature of education.

The development of the behavioral school of management in the 1940's resulted in the field of organizational management shifting from a task-oriented method of administration to more of a human relations approach (4). This movement has been effective in educational institutions, resulting in faculty satisfaction from faculty-administration-student interaction. The major concern of this movement was to find out how an individual could be motivated in his job. Because of this movement the concept of motivation received wide attention by writers and researchers in various fields. However, few studies have been reported in the field of education concerning motivation and job satisfaction among community college and university faculties (1).

In different studies the terms "morale," "job satisfaction," "job attitudes," and "motivation" have been used
interchangeably. However, some researchers have drawn significant distinctions between them. Vroom (17) stated that "job satisfaction" and "job attitudes" are used interchangeably since both refer to the affective orientation of the individual toward the work role he is occupying. The term "morale" has been given various meanings, some of which are closely related to the other two concepts. Beer (2), an industrial psychologist, did not equate the terms. He defined "job satisfaction" as the attitude of workers toward the company, their job, their fellow workers, and other psychological objects in the work environment. "Morale" is defined as a group phenomenon similar to "esprit de corps," or a group enthusiasm in the pursuit of a common goal.

Berelson and Steiner defined motivation as "all those inner striving conditions described as wishes, desires, drives, etc...it is an inner state that energizes, activates, or moves...and that directs or channels behavior toward goals" (3, p.239). The result of motivation is purposive, goal-directed behavior that leads to satisfaction. This definition parallels Vroom's definition.

Motivation has often been called an intervening variable. Intervening variables are internal psychological processes which are not directly observable, yet which account for behavior. "Motivation" is an intervening variable; a concept that accounts for presumably "motivated" behavior (12). Donnelly and others (4) classified motivation as an
intervening variable because it cannot be seen, heard, or felt and can only be inferred from behavior. Motivation cannot be measured directly because it is unobservable.

How does the concept of motivation relate to job satisfaction? Psychologists generally agree that all human behavior is motivated and that people have reasons for doing the things they do or for behaving in a certain way or manner (4). Human behavior is designed to achieve certain goals and objectives. Such goal-directed behavior revolves around the desire for need satisfaction. In this regard, unsatisfied need is the starting point in the process of motivation. Activity is directed toward a goal which, when attained, satisfies the need. The process of motivation is complete when the need is satisfied.

According to Herzberg and his associates, job satisfaction is "one's overall attitude toward his job, whether he likes or dislikes it" (10, p. 5). Smith and Hulin (15) indicated that job satisfaction represents the discrepancy between what is expected and what is experienced in relation to the alternatives available in a given situation; Porter and Lawler described job satisfaction as a function of the "extent to which rewards actually received meet or exceed the perceived equitable level of rewards" (14, p. 118).

Weaver (18) examined the job satisfaction of 7709 workers from 1972 to 1978 and found that their job satisfaction was positively associated with their demographic characteris-
tics. Weaver also found no significant difference in the level of job satisfaction between men and women.

Glenn and others found that older men and women are more satisfied with their jobs than younger co-workers. They speculated that "job satisfaction might tend to increase as workers grow older because of the extrinsic rewards of work... an increase for many, although not all, workers" (7, p. 192).

Other researchers have focused more specifically on the attitudes of professionals in different fields. The importance of job satisfaction is obvious in the field of education. In the area of higher education, Fedler (6) indicated that faculty members who are satisfied with their jobs may be more productive than dissatisfied colleagues and therefore more likely to retain their present jobs. Job satisfaction among faculty members may result in developing harmonious relationships with their students, colleagues, and administrators.

Fedler (6), in a study of 300 professors' job satisfaction related to academic rank, found that respondents were satisfied with the freedom which they were given to do their work, their relationships with their colleagues and department chair-person, their teaching loads, and their opportunities for professional growth. Faculty members were dissatisfied with their physical working conditions, salaries, and the financial support provided for their research.
Another source of dissatisfaction was that tenure and promotions at their institutions were not granted fairly.

Gonnet (8), in a study of job satisfaction among two-year junior college faculty members, found that there were significant interaction effects between gender and length of service, in relation to the job satisfaction variables. Results indicated that the level of job satisfaction for male and female faculty members was quite high. However, veteran faculty members were not satisfied with the amount and quality of the feedback they received from their supervisors.

Openshaw (13), in a study of job satisfaction of faculty members at Georgia State University, found that both motivation and hygiene factors* contributed to job satisfaction rather than to job dissatisfaction in a higher education institution. He further found that hygiene factors were the most important indicators of job satisfaction. Results of this study indicated that academic administrators were more satisfied than full-time teachers.

The present study has incorporated several aspects of the Gonnet and Openshaw studies and has enlarged several aspects of job satisfaction which were not covered by them. It has

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* Motivation and hygiene are words used by Herzberg as terms designating certain factors in the work environment (see page 8).
measured the level of job satisfaction of faculty members at North Texas State University. The number of full-time faculty members participating in this study was 304. The questionnaire which was used, was composed of two parts--the Job Descriptive Index and a faculty data sheet. The Job Descriptive Index was based on Herzberg's theory and measured five factors of job satisfaction: the work itself, salary, opportunities for promotion, supervision, and co-workers. The faculty data sheet consisted of eight questions concerning demographic characteristics.

One aspect of this study was the investigation of rank of faculty members in relation to factors of job satisfaction. Another aspect was whether types of activity of faculty members, such as teaching, research, and administration, were related to their perception of job satisfaction.

STATEMENT OF THE PROBLEM

The problem in this study was to determine the factors affecting attitudes of faculty members in a higher education institution which, according to Herzberg's Two-Factor theory, lead to motivation and job satisfaction. The predictive value of job content factors, as well as job context factors, with regard to demographic characteristics, has been studied.
PURPOSES OF THE STUDY

The main purpose of this study was to measure the level of job satisfaction among the ranks of professor, associate professor, and assistant professor. Specifically,

1. to compare the level of job satisfaction for faculty members classified by gender.
2. to study the perception of job satisfaction among faculty members when categorized by rank.
3. to identify the types of activity of faculty members which were related to their perception of job satisfaction.
4. to evaluate the applicability of the two-factor theory regarding faculty members.
5. to correlate the degree of job satisfaction of faculty members to their demographic characteristics.

SIGNIFICANCE OF THE STUDY

It has been important to higher education administrators to identify the factors affecting faculty members' motivation which ultimately result in job satisfaction. To increase their efficiency and effectiveness, higher education institutions need to improve the job satisfaction of their employees. It is essential for higher education administrators to have a working knowledge of motivational and hygiene factors which help in recruiting and retaining faculty members, thus creating an effective teaching, research, and public service force.
This study has provided information related to levels of job satisfaction and dissatisfaction, as well as to sources of motivation among faculty members at North Texas State University, Denton, Texas. This information will enable university administrators in general, and department chairpersons in particular, to better understand the relationships between job content factors, job context factors, and job satisfaction.

DEFINITION OF TERMS

Motivation Factors. Motivation factors refer to achievement, recognition, work itself, responsibility, and advancement—all of which are sources of job satisfaction, not sources of job dissatisfaction. Frequently, in various studies, these factors have been called satisfiers, intrinsic factors, or job content factors. The work itself, and advancement factors, are the topics under investigation in this study.

Hygiene Factors. Hygiene factors refer to company policy and administration, supervision, salary, interpersonal relations, and working conditions, which, according to Herzberg, are sources of job dissatisfaction, and positive attitudes toward them do not improve job satisfaction (9). Many researchers refer to them as dissatisfiers, extrinsic factors, and job context factors. The factors of salary, supervision, and interpersonal relationships are under investigation in this study.
Job satisfaction. Job satisfaction is defined as the positive feeling a person has about his job. Vroom (17) defined it as the affective orientation (positive attitude) of the individual toward the work role he is occupying.

Job Dissatisfaction. Job dissatisfaction is referred to as the negative attitudes of an individual toward his job conditions as a result of different factors.

Faculty Members. Faculty members refers to all full-time faculty members working at North Texas State University with the ranks of professor, associate professor, and assistant professor.

Job Descriptive Index. The Job Descriptive Index refers to the research instrument for the purpose of measuring job satisfaction. It was developed at Cornell University by Patricia C. Smith and her associates (16).

Demographic Characteristics. The demographic characteristics of each subject were requested in the second part of the questionnaire. These characteristics are: gender, age, educational degree, college affiliation, faculty status, years of experience, and types of activity (teaching, research, and administration).

LIMITATIONS OF THE STUDY

Herzberg and his associates (10) used a research technique in their original study called "critical incident technique." This method of research has been criticized by
different researchers because of its restrictions. According to House and Wigdor (11) and Ewen (5), there are two limitations for critical-incident technique. First, the meaning of an item presented to a respondent might be unclear. Second, the respondent's answer could be given in terms of real job experience or in terms of general opinion. These limitations are relevant to the present study.

BASIC ASSUMPTION

It was assumed that faculty members would complete honestly and objectively the different parts of the questionnaire.

CRITERION VARIABLES

The criterion variables which have been employed in this study are the work itself, pay, opportunities for promotion, supervision, and co-workers. Those characteristics have been measured by the job descriptive index. The demographic variables included gender, age, educational degree, college affiliation, faculty rank, faculty status, years of experience, and types of activity.


Chapter II

REVIEW OF RELATED LITERATURE

Concern about human behavior has been an important subject since early historical times. Many philosophers, psychologists, and sociologists have done extensive research on behavior. Through different historical periods, various theories of motivation, which explain human behavior, have been developed. Each theory of motivation has its own particular structure with a certain methodology. These theories started with Taylor's scientific motivational concepts and continued with Maslow's Need Hierarchy motivational concepts (22). In the 1960's Herzberg's theory of Motivation-Hygiene became an important concept and attracted the attention of many writers. The theory of Cognitive Dissonance by Festinger (9) was based on the psychological assumption of cognitive balance. Vroom's Valence-Expectancy Motivational theory (33), which was developed during the late 1960's, is the latest motivational theory.

The early writers on management, under the influence of the classical economists of the 18th and 19th centuries, emphasized man's rational pursuit of economic objectives and believed that human behavior was characterized by rational economic calculations (5). However, psychologists believe
that monetary incentives are important motivators, and serve to satisfy other than purely economic needs. Human behavior is motivated to satisfy so many needs that there is a controversy concerning these needs and their relative importance.

From a review of the literature of job satisfaction, a discussion of the major theories of motivation—including Maslow, Herzberg, Festinger, and Vroom, and their contributions over the past fifty years—follows.

**MASLOW'S HIERARCHY OF NEEDS THEORY**

In 1943, Maslow (22) developed his theory of motivation stressing two fundamental assumptions. First, a satisfied need is not a motivator; only needs not yet satisfied can influence human behavior. Second, man's needs are arranged in a hierarchy of importance; once one need is satisfied, another emerges and demands satisfaction.

Maslow (22) identified five level of needs as physiological, safety, social, esteem, and self-actualization, and placed them in a framework referred to as a hierarchy of needs. Maslow believed that the most predominant needs will be more pressing than others. Those needs which come first are on the lowest level and must be satisfied before higher level needs come into play.

The first level of need consists of the primary needs of the human body, such as food, water, and sex. According to
Maslow, physiological needs will dominate when all needs are unsatisfied. In such a case, no other needs will serve as a basis for motivation. "A person who is lacking food, safety, love, and esteem would probably hunger for food more strongly than for anything else" (22, p. 82).

The next higher level of need is safety. Safety needs include protection from physical harm, ill health, economic disaster, and avoidance of the unexpected. Maslow believed that safety needs reveal themselves in attempts to insure job security and to move toward greater financial independence.

The third level in Maslow's hierarchy of needs is that which relates to the social and gregarious nature of man—his need for companionship. Nonsatisfaction at this level may affect the mental health of the individual.

The fourth level, esteem, consists both of the need for a feeling of being important to others (self-esteem), and actual esteem from others. Satisfaction of these needs leads to a feeling of self-confidence and prestige.

The highest level is self-actualization. Maslow defined this need as "the desire to become more and more what one is; to become everything one is capable of becoming" (22, p. 92). It is obvious that as the role of the individual varies, so will the external aspects of self-actualization. Maslow assumed that satisfaction of this need was possible only after the satisfaction of all other needs in the hier-
archy. Maslow's hierarchy of needs theory pointed out major factors that motivate people in any type of organization.

It has a great deal of common sense validity, and it is easily understood. Since human behavior is primarily directed toward fulfilling unsatisfied needs, the success of any manager or administrator is dependent on his ability to satisfy the higher-level needs of his employees.

Prien and his associates pointed to the most general application of such a concept in relation to work when they stated that "the traditional view that man works only because of necessity to survive, must give way to the view that work itself is or can be rewarding" (30, pp. 40-43).

In support of the need-theory approach, many studies have found that self-actualization and autonomy--highest need categories, were felt to be the most important and the least fulfilled needs across most levels of management. It was also found that job security is a major concern of all groups of workers. Both of these ideas mentioned by Porter (29) and Dufty (6) are consistent with Maslow's theory of a needs hierarchy, since only a few groups seem to have fulfilled the highest needs, whereas all are concerned with the more basic needs.

HERZBERG'S MOTIVATION-HYGIENE THEORY

Fredrick Herzberg (12) developed his theory of Motivation-Hygiene based on a study of need satisfaction and on
the reported motivational effects of this satisfaction on 200 engineers and accountants. It is often referred to as the Two-Factor theory of motivation.

Herzberg (12) used a methodology which has come to be called "critical-incident technique." The subjects were asked to recall times when they felt especially good about their jobs, and times when they felt especially bad about them. Each employee was then asked to describe the conditions which led to these particular feelings. Five factors were identified as primary sources of job satisfaction--achievement, recognition, the work itself, responsibility, and advancement. These are called motivational factors or satisfiers. The presence of these factors builds high levels of motivation and ultimately job satisfaction. These factors, which are sometimes called job content factors, or intrinsic factors, were not a source of job dissatisfaction.

There are some job conditions which operate primarily to create dissatisfaction when there are negative attitudes toward them. However, positive attitudes toward these conditions do not build strong motivation. Herzberg called these "hygiene factors," since they are necessary to maintain a reasonable level of job satisfaction. These factors, which are sometimes called job context factors, or extrinsic factors, were company policy and administration, supervision, salary, interpersonal relations, and working conditions.
The important findings of this particular study were that motivational factors were job centered: that is, they related directly to the job content itself, the individual's performance of his job, the responsibility involved in the job, and the growth and recognition obtained from the specific job. Hygiene factors are peripheral to the job itself and are more related to the external environment of work. When employees are highly motivated, they have a high tolerance of dissatisfaction arising from peripheral factors.

Herzberg's theory has been one of the most controversial theories of motivation and has received widespread attention in the literature. Studies in which the basic Herzberg methodology was used to collect and analyze the data typically confirmed Herzberg's theory. Yet, studies where researchers used different techniques for data analysis either did not support Herzberg's theory, or at best gave equivocal support to it.

Halpern (10), in a study of ninety-three male subjects who were equally satisfied, found that there was no difference in the subjects' rating of satisfaction in relation to either motivator factors or hygiene factors. Also, as predicted by the Motivation-Hygiene theory, motivator factors contributed significantly more to overall satisfaction than did hygiene factors. Hence, results of this study supported the basic thesis of Herzberg's theory of job satisfaction.
Centers and Bugental (2), in a study of an urban area's working population (N=692) with respect to their motivation, found that both extrinsic and intrinsic job components related to occupational levels. At higher occupational levels, intrinsic job components--opportunity for self-expression, interest-value of work, and feeling of satisfaction derived from the work itself--were more valued. At lower occupational levels, extrinsic job components--pay, security, and satisfying co-workers--were more valued. No sex differences were found in the value placed on intrinsic or extrinsic factors in general. This study supported the Two-Factor theory of Herzberg.

Porat (28), in a study of job satisfaction of thirty-one white collar employees of an industrial organization, found that job involvement was significantly related to job satisfaction. It appeared that job involvement and job satisfaction were mediated by organizational factors. The Two-Factor theory of Herzberg was used, and data supported the Motivation-Hygiene theory, indicating that only the motivator variables correlate significantly with sub-scales of organizational factors.

Ewen (8) criticized the Herzberg theory, citing several deficiencies in the methodology which Herzberg used. The Herzberg study included only engineers and accountants, which represent only a small sample of jobs. Using a single method of measurement--the interview, raised questions
concerning the generality and validity of the findings. No evidence was cited as to the validity or reliability of the data. In addition, the absence of a measure of overall job satisfaction was another weakness of this study.

Lindsay and her associates (21), in a small aerospace research and development company in central Pennsylvania (n=600), found that both motivator and hygiene factors were related to job satisfaction. She criticized Herzberg for using the critical-incident technique with its lack of specification for functional relationships between the variables of the study. The results of the study indicated that the Herzberg Motivation-Hygiene theory could be used to describe most of the variance in job satisfaction, and the disjointed relationship between motivation and hygiene factors as postulated by Herzberg was not found. Motivation factors were more important to job satisfaction than were hygiene factors. They suggested reevaluation of Herzberg's concept of job satisfaction in order to test the two unpolar continua.

In another study, Smith and Hulin (31) investigated the two-factor theory of job satisfaction by using data from 670 office employees, supervisors, and executives in a company. The results indicated that the predictions of the Two-Factor theory were not supported at all. The traditional model of job satisfaction, which maintains unidimensionality of satisfying factors and dissatisfying factors, and also
states that any factor in the job situation can be both a satisfier and a dissatisfier, was supported. The data from this study indicate that a division of the factors into intrinsic and extrinsic, is more meaningful than the labels "satisfiers" and "dissatisfiers."

FESTINGER'S THEORY OF COGNITIVE DISSONANCE

Although Herzberg's theory of Motivation-Hygiene and Maslow's theory of the Hierarchy of Needs seem close to reality, there still remain many unexplained factors. Other studies dealing with job satisfaction suggest additional dimensions in an attempt to explain these factors. Psychologist Leon Festinger (9) has analyzed a dimension based on the idea of cognitive balance. His theory, known as "Cognitive Dissonance," is based on the assumption that people strive to avoid inconsistencies in their beliefs. He suggested that dissonance between two cognitive elements will motivate an individual to do whatever is easiest to achieve a consistency between disparate beliefs. This may entail changing one of the conflicting attitudes or merely reweighing the importance of various attitudes or factors determining them. Such mechanisms are at work in our everyday decisions, but they often become very complex.

Handyside (11) confirmed this idea and stated that "job satisfaction is a dynamic process of balancing one thing against another, rather than a static process of having a
particular level of all-over satisfaction." When adjustment is difficult, frustration may result, which ultimately may cause dissatisfaction.

Lahiri and Srivasta (19) identified Festinger's theory of cognitive dissonance as an attempt to examine the relationship between Herzberg's and Maslow's theory concepts and their findings. They suggested dissatisfaction in the higher level of needs resulting in the occurrence of disequilibrium or dissonance. Within this type of a situation, an individual must readjust his inner attitudes in accordance with the good aspects of the environmental or hygiene factors on his job.

Regarding the idea of a cognitive balance system, an input-output model of job satisfaction was proposed by Katzell, Barrett, and Parker (17). They perceived employee satisfaction and performance as the output, with work environment and employee efforts as the input. Input affects the output through the employee's motivation and ability. Weick (35) developed this concept further when he stated that "inequity exists for an individual whenever the ratio of his outcome to his input and the ratio of other's outcome to their input is unequal..." therefore, inequity here is a facet of dissonance.
VROOM'S EXPECTANCY-VALANCE THEORY

A recent theory of motivation and job satisfaction was developed by Vroom, who expanded upon the theories of Maslow and Herzberg. His model viewed motivation as a process governing choices. Vroom (33) referred to the concept of job satisfaction and job attitudes as affective orientations on the part of individuals toward roles. He further stated that positive attitudes were conceptually equivalent to job satisfaction and negative attitudes were equivalent to job dissatisfaction.

Vroom's model asserted that "the probability of a person performing an act is a direct function of the algebraic sum of the products of the value of outcomes and expectancies that they will occur given the act" (33, p. 276). In order for an individual to achieve a specific goal, some particular behavioral pattern must be chosen. The individual, therefore, weighs the probability of various behavioral patterns aiding in achieving a desired goal, and if a certain behavior is judged to be more successful than another, that type of behavior is selected.

An important aspect of Vroom's theory is that it explains how the goals of individuals influence their efforts and how the behavior individuals select depends upon their assessment of the likelihood that such behavior will result in successful achievement of those goals. Vroom emphasized the importance of individual perceptions in the assessment of
organizational behavior. What the individual perceives to be the consequence of a particular behavior is far more important than what the manager or administrator intends the individual to perceive.

Vroom’s theory seems to be more abstract than that of Maslow and Herzberg. However, it provides additional insight into the study of job satisfaction and motivation at work, since it views human behavior as subjectively rational and directed toward the attainment of desired outcomes and away from unwanted outcomes.

LITERATURE RELATED TO JOB SATISFACTION IN HIGHER EDUCATION

Research literature relative to job satisfaction and motivation in the educational field is limited to reports of studies done at lower-level educational institutions such as elementary and secondary schools. However, the study of job satisfaction in higher education is a relatively recent undertaking.

Penny assumes that teachers are not much different from people in other occupations with respect to motivation and job satisfaction. Occupational burnout, which is not a new phenomenon, is the result of one’s response to stress. He defines stress as "a positive or negative reaction occurring when there is a substantial imbalance between environmental demands and the response capability of the individual" (26, p. 46). Teacher burnout, or job dissatisfaction, like that
of other occupations, has different sources: such as excessive student violence and discipline problems, lack of community respect and parent distrust, limitations created by federal and state laws, and court-ordered mandates.

Weller (36) believed that people problems were the major cause of dissatisfaction among teachers. Therefore, he suggested with respect to Maslow's Hierarchy of Needs, a behavioral approach which would help administrators meet the essential needs of teachers and provide them with job satisfaction.

Williams (37) indicated that motivation of teachers through elimination of factors which contribute to job dissatisfaction was not sufficient to improve teacher effectiveness and performance. With regard to Maslow's theory, teachers were more likely to be motivated by activities and incentives which would move them to a higher level of satisfaction. Therefore, the effective administrator was one who could satisfy teachers' basic needs and then move them to satisfaction in the categories of self-esteem and self-actualization.

In a study of job satisfaction among teachers in forty-three states, Chase (3) identified teacher satisfaction as being greatly affected by freedom to plan their own work and by a sense of professional status and responsibility. The adequacy of salary, the opportunity to participate in the determination of salary schedules, educational planning, and
policy making, were effective factors in teacher satisfaction. Satisfaction in the system was dependent to a considerable extent upon the teacher's feeling that all working conditions were permitting effective work.

Wangberg and his associates (34), in a study of job satisfaction for female elementary teachers, determined that teachers were currently experiencing a significant amount of job dissatisfaction. The sources of dissatisfaction were working conditions and the general perception of career options. Although teachers were intrinsically job-motivated through their greatest source of satisfaction—positive contacts with their pupils, outside demands of society and administrative pressures resulted in a decrease in the number of positive contacts.

McPherson (24), in his study of job satisfaction and performance among 2,200 elementary and secondary teachers, concluded that pay and promotion satisfactions were not strongly associated with the selected organizational properties. He suggested that administrators should realize that not all facets of job satisfaction are affected by the organizational properties of the school. Involvement in decision making in the areas of teaching fields, teacher preparation, expenditure per student, and campus size, had the greatest effects on job satisfaction.

Corwin (4), in an attempt to investigate what factors motivated college faculty members, found that out of a wide
variety of outcomes or motivators, prestige, pay, and promotion ranked the lowest. This study involved junior college faculty. Wood (38), also in a community college setting, found that motivator factors were significantly more closely related to job satisfaction than were hygiene factors. In a study among private liberal arts colleges, Tarvin (32) found that intrinsic factors, or nonmaterial rewards, had more positive effects on the motivation of faculty members than did extrinsic factors, or material rewards. Similar results among the nursing faculty at a four-year college were reported by McKee (23).

In a study of junior college faculty, Kepple (18) found that older, tenured faculty were more satisfied with their jobs than were younger, nontenured faculty. Wozniak (39), in a study of music faculty, found that overall job satisfaction was not related to age or years of teaching experience. Poosawtsee (27) did a similar study, but found that age and years of teaching experience did relate positively to extrinsic levels of job satisfaction.

In state universities, Leon (21) found that faculty job satisfaction was determined primarily by "motivators," whereas job dissatisfaction was determined primarily by "hygiene" factors. Hodge (14) found that job satisfaction increased with the number of years of professional experience. Among social work educators, Enos (7) found that those faculty members holding tenure in the higher academic
ranks reported higher levels of job satisfaction than nontenured social work faculty members in lower academic ranks.

In a study of sex differences in relation to job satisfaction, Hollon and Gemmill (15) found that statistically significant differences existed between male and female college faculty members. Female teaching professionals in the academic environment expressed less overall job satisfaction than did their counterparts. Hill (13), in a comparison study of unionized and nonunionized faculty members, found that unionized faculty members were significantly more satisfied than nonunionized faculty members.

Benoit and Smith (1), in a study of job satisfaction in a community-college faculty, found that the major areas of job satisfaction for faculty members were: enjoyment of teaching college-age students, working in a desirable environment, and having freedom and independence. The major areas of dissatisfaction were: the need to transmit elementary knowledge, ill-prepared or unmotivated students, administrative procedures, and pay. Hunter and her associates (16) studied faculty morale at the University of Texas at Arlington and found that faculty members reported more satisfaction with their work than with their institution. Teaching appeared to be an important contributor to a high level of job satisfaction. Lack of appreciation of teaching efforts was viewed as a source of dissatisfaction.
In a faculty survey at North Texas State University, Newell and Naugher (25) found that most faculty members were satisfied with their workload within the department and obtained satisfaction from their contributions to the university. Sources of dissatisfaction were feelings that policies and procedures were not applied uniformly across the institution and the lack of criteria for distribution of funds allocated for merit pay raises. Few questions in this survey dealt with the job satisfaction of faculty members.
CHAPTER BIBLIOGRAPHY


Chapter III

Procedures

This study attempted to measure the level of job satisfaction among faculty members at North Texas State University. This chapter describes the study, with reference to the population, selection of the sample, the instrument, and procedures for the collection and analysis of data.

POPULATION

The population of this study consisted of all full-time faculty members, male and female, with ranks of professor, associate professor, and assistant professor, holding teaching, research, and/or administrative positions at North Texas State University in the 1983-84 academic year. The following colleges and schools were involved in the study:

1. College of Arts and Sciences
2. College of Business Administration
3. College of Education
4. School of Community Service
5. School of Home Economics
6. School of Library and Information Science
7. School of Music
SELECTION OF DATA PRODUCING SAMPLE

The population consisted of 664 full-time faculty members during the spring semester of 1984. A systematic sample of 332 subjects, equal to half of the population, was drawn from an alphabetical list of the faculty members based on odd-even numbering. It was assumed that 60 percent of the sample would return the questionnaires. Approximately 50 percent of the questionnaires were returned, so the other half of the population was surveyed in order to obtain respondents.

Three hundred and four questionnaires were returned—approximately 45.8 percent of the total population.

THE INSTRUMENT

The instrument used for collecting data was the Job Descriptive Index (JDI) developed by Smith and others (in seven pages) and a faculty data sheet (in two pages). Items in the JDI were obtained from critical incident interviews and early job satisfaction and motivation literature by Smith and others (4). The items were chosen on the basis of item analysis. The scales have shown high reliability as well as discriminant and convergent validity. Smith and others found a high correlation between the Job Descriptive Index and other measures of satisfaction (average r=.70) (4, p. 75). The instrument appears free of response set, acquiescence, and scale order effects. It employs the "job
The Job Descriptive Index explored respondents' attitudes toward discriminant aspects of their jobs. Specifically, it measured satisfaction in five areas of a job: the work itself, pay, opportunities for promotion, supervision, and co-workers. According to Herzberg's theory, the work itself and opportunities for promotion were motivational factors and the other three were hygiene factors.

Each area, or subsection, was represented on a separate page (size 3.5" X 8") and consisted of a vertical list of adjectives or phrases. Three of the areas (work, supervision, and co-workers) contained eighteen items each; two of the areas (pay and opportunities for promotion) contained nine items each, for a total of seventy-two items.

Instructions for each area asked respondents to think of their present work and what it was like most of the time. In the blank beside each word, respondents were asked to write "Y" for "Yes" if it described their work, "N" for "No" if it didn't describe it, or "?" if they could not decide.

Bridges (1) indicated that the Job Descriptive Index was the most adequate measure of job satisfaction because of its high convergent and discriminant validity. Ewen (2) used the Job Descriptive Index, in addition to other instruments, to measure the importance of job components in relation to satisfaction. Imparato (3), in a study of several different
research instruments, indicated that the distinctive characteristic of the Job Descriptive Index is that it considers the importance of different kinds of satisfaction while the others ignore the importance of satisfaction. Vroom called this instrument "without a doubt the most carefully constructed measure of job satisfaction in existence today" (5, p. 100).

The second part of the instrument consisted of eight questions dealing with demographic and job-related data. This part included three demographic questions: sex, age, and educational degree. It also included five job-related questions: college affiliation, faculty rank, faculty status, years of experience, and types of activity (see appendix A). The respondents were asked to circle the number of the appropriate answer to each question.

To make the faculty data sheet conform to the Job Descriptive Index, it was printed in the same page size (3.5" X 8") at the print shop of North Texas State University.

PROCEDURE FOR COLLECTING DATA

Written permission to conduct this study was requested and received from the Vice President for Academic Affairs (see appendix C). From an alphabetical list of faculty members, a systematic sample was drawn from the various colleges and schools. The sample consisted of one half of
the population. A return of 200 usable questionnaires was determined to be the minimum level of acceptability.

Permission to use the Job Descriptive Index, was obtained from Patricia C. Smith of the Psychology Department at Bowling Green State University on September 7, 1983 (see appendix B). Seven hundred copies of the Job Descriptive Index were received in two shipments from Bowling Green State University.

A cover letter was prepared to introduce the study and to motivate respondents to return the questionnaire. Respondents were assured of confidentiality of data and anonymity of subjects.

Envelopes containing the questionnaire, cover letter, and return envelope were addressed and taken to all faculty members' offices on February 2, 1984. By permission of the Division Chairman of Adult and Higher Education, intracampus mail was used for the return of the questionnaires (see appendix D).

There was a two-week waiting period for the return of the instrument. After two weeks, 152 questionnaires were returned, a return of forty-five percent. Then a follow-up letter was prepared and mailed to each subject. This resulted in a return of 12 more questionnaires. From the 164 returned questionnaires, 160 were usable.

Due to failure in achieving a return of 200 on the first mail-out, the second half of the population was mailed a
questionnaire on March 6, 1984. During a two-week waiting period 145 questionnaires were returned of which 144 were usable. A total of 304 questionnaires were processed for the analysis of data.

DESIGN OF THE STUDY

The design of the study was 2 X 3 and 3 X 3. The independent variables were sex, rank, and types of activity. In addition, demographic and job-related variables were also considered as independent variables. Gender was classified as male and female. Rank had three levels: professor, associate professor, and assistant professor. Types of activity included three levels: teaching, research, and administration. Of the demographic and job-related variables, age had two levels: under 40 and 40 years and over. Educational degree had four levels: Ph.D., Ed.D., Masters, and Bachelors. College affiliation had seven categories. These were seven divisions within the North Texas State University. Status had two levels: tenured and nontenured. Experience had five levels which were combined to two levels for the purpose of statistical analysis. These were 10 years of experience or less and over 10 years of experience. The dependent variables were the Job Descriptive Index scores of the work itself, pay, promotion, supervision, and co-workers.
This study utilized four types of statistical analysis: ANOVA, MANOVA, Multiple Comparison, and Factor analysis. From the multiple comparison procedures, the Scheffe test was considered more appropriate than the others. It had two advantages: first, it was not limited to samples of equal size; second, it was not limited to simple pairwise comparisons. In addition, it was quite insensitive to departures from normality and homogeneity of variance.

PROCEDURES FOR ANALYSIS OF DATA

The 304 usable questionnaires were scored. According to the instructions for scoring the Job Descriptive Index, all favorable answers were scored 3, all unfavorable answers were scored 0, and omissions or "?" were scored 1. The scoring key for each subsection indicated favorable and unfavorable answers. The scores for pay and opportunities for promotion were doubled in order to make them numerically equivalent to the scores on the other subsections.

The scores were transformed to the Fortran chart sheet for use in the North Texas State University Computer facility. Responses from the Fortran chart sheet were coded and entered in the computer by the use of a card punch. The SPSS--Statistical Package for the Social Sciences--was utilized for all computation of frequencies and statistical tests. Hypotheses were tested for significant differences between the means through the ANOVA, MANOVA, and the Scheffe
test. Results of the statistical analysis of data are reported in chapter 5.
CHAPTER BIBLIOGRAPHY


Chapter IV

PRESENTATION OF DATA

The present study deals with the job satisfaction of 304 full-time faculty members in seven colleges and schools at North Texas State University. The faculty members were involved in teaching, research, and administration during the spring semester of 1984.

The questionnaire consisted of two parts: the faculty data sheets were completed in 304 cases and the Job Descriptive Index was completed on all subscales in 276 cases. There were 28 cases with one or two areas missing. These were included in the data. There were four cases with more than two areas of missing data and two cases in which respondents refused or neglected to complete any area or subscale of the Job Descriptive Index. These cases were not included in the study.

The purpose of the present study was to determine if significant differences existed between the mean scores of the Job Descriptive Index relative to all independent variables. Also, the effects of interaction of three independent variables (sex, rank, and types of activity) were studied.

The theoretical basis of this study was Herzberg's theory of Motivation-Hygiene factors. The statistical test of
factor analysis was applied to determine if other factors relative to job satisfaction existed. The theory of Motivation-Hygiene was tested to verify if the faculty members considered job satisfaction as dependent on two distinctive factors.

All the calculations were done through the use of the SPSS, Statistical Package for Social Sciences, at the North Texas State University Computer Center.

The rest of the chapter is devoted to a discussion of the findings on each of the seven research hypotheses. To aid in the discussion of the results, statistical summary tables for each hypothesis are utilized. Multiple R Squares are included in tables as a measure of correlation between independent and dependent variables. The proportion of Multiple R Squares was relatively low. Either the nature of the instrument or the effects of the areas which were not covered by the instrument could be considered as possible reasons for low correlation.

HYPOTHESIS 1

H1: Male faculty members will have a significantly higher mean score on each subsection of the Job Descriptive Index than will female faculty members.

a) The work itself

b) Present pay

c) Opportunities for promotion
d) Supervision  
e) Co-workers (people on the job)

Each of the research hypotheses was tested in the null form. Information relative to Hypothesis 1 is presented in Table I.

<table>
<thead>
<tr>
<th>TABLE I</th>
<th>ANALYSIS OF VARIANCE FOR JOB DESCRIPTIVE INDEX</th>
</tr>
</thead>
<tbody>
<tr>
<td>GENDER (Male, Female)</td>
<td>N=218 MALE, 59 FEMALE</td>
</tr>
<tr>
<td>Variables</td>
<td>Source of Variation</td>
</tr>
<tr>
<td>Work Itself</td>
<td>Gender</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
</tr>
<tr>
<td></td>
<td>Total</td>
</tr>
<tr>
<td>Pay</td>
<td>Gender</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
</tr>
<tr>
<td></td>
<td>Total</td>
</tr>
<tr>
<td>Opp. for Promotion</td>
<td>Gender</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
</tr>
<tr>
<td></td>
<td>Total</td>
</tr>
<tr>
<td>Supervision</td>
<td>Gender</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
</tr>
<tr>
<td></td>
<td>Total</td>
</tr>
<tr>
<td>People on Job</td>
<td>Gender</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
</tr>
<tr>
<td></td>
<td>Total</td>
</tr>
</tbody>
</table>

An examination of Table I will reveal that there were no significant differences in the mean scores on any of the subsections of the Job Descriptive Index. The null hypothesis was retained for each subsection and the research hypotheses were each rejected.
HYPOTHESIS 2

H2: Faculty members with the rank of professor will have a significantly higher mean score on each subsection of the Job Descriptive Index than will faculty members with the rank of

a) Associate professor

b) Assistant professor.

Information pertaining to Hypothesis 2 is presented in Tables II, III and IV.

The data in Table II seem to indicate that on three subsections (opportunities for promotion, supervision, and people on the job), there were no significant differences, so the null hypothesis was retained and the research
hypothesis was rejected. On two subsections there was a significant difference, hence the null hypothesis was rejected. To determine where the difference was located, a Scheffe was performed. This information is presented in Table III.

<table>
<thead>
<tr>
<th>TABLE III</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCHEFFE TEST PROCEDURE (Follow-up Procedure for Hypothesis 2)</td>
</tr>
<tr>
<td>PAY, Subsection of the Job Descriptive Index</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group</th>
<th>Faculty Rank</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Professor</td>
<td>117</td>
</tr>
<tr>
<td>2</td>
<td>Associate Professor</td>
<td>94</td>
</tr>
<tr>
<td>3</td>
<td>Assistant Professor</td>
<td>30</td>
</tr>
</tbody>
</table>

An examination of Table III will show that the mean score for pay in relation to job satisfaction for professors was significantly greater than that for either associate or assistant professors. The null hypothesis was rejected and the research hypothesis was accepted.

An examination of Table IV will show that in three areas (opportunities for promotion, supervision, and people on the job) there were no significant differences; therefore, the null hypothesis was retained and the research hypothesis was rejected. In the areas of work itself and pay, there was a significant difference. A Scheffe test was used to locate
TABLE IV
ANALYSIS OF VARIANCE FOR JOB DESCRIPTIVE INDEX
N=104 PROFESSOR, 83 ASSISTANT PROFESSOR

<table>
<thead>
<tr>
<th>Variables</th>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>D.F.</th>
<th>Mean Square</th>
<th>F</th>
<th>P</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work</td>
<td>Rank</td>
<td>339.21</td>
<td>1</td>
<td>339.21</td>
<td>4.04</td>
<td>.05</td>
<td>Multiple R= .146</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>15527.06</td>
<td>195</td>
<td>83.23</td>
<td></td>
<td></td>
<td>Mul. R Sq=.021</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>15866.27</td>
<td>196</td>
<td>85.30</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Itself</td>
<td>Rank</td>
<td>3794.61</td>
<td>1</td>
<td>3794.51</td>
<td>13.82</td>
<td>&lt;.01</td>
<td>Multiple R= .304</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>36415.03</td>
<td>195</td>
<td>186.83</td>
<td></td>
<td></td>
<td>Mul. R Sq=.032</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>40119.64</td>
<td>196</td>
<td>215.69</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pay</td>
<td>Rank</td>
<td>73.55</td>
<td>1</td>
<td>73.55</td>
<td>.27</td>
<td>.60</td>
<td>Multiple R= .038</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>49773.56</td>
<td>195</td>
<td>260.24</td>
<td></td>
<td></td>
<td>Mul. R Sq=.001</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>49847.11</td>
<td>196</td>
<td>247.89</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opp. for</td>
<td>Rank</td>
<td>28.28</td>
<td>1</td>
<td>28.28</td>
<td>.15</td>
<td>.69</td>
<td>Multiple R= .029</td>
</tr>
<tr>
<td>Promotion</td>
<td>Residual</td>
<td>232237.39</td>
<td>195</td>
<td>1173.55</td>
<td></td>
<td></td>
<td>Mul. R Sq=.001</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>232565.27</td>
<td>196</td>
<td>1209.35</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supervision</td>
<td>Rank</td>
<td>52.51</td>
<td>1</td>
<td>52.51</td>
<td>.08</td>
<td>.53</td>
<td>Multiple R= .048</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>248777.36</td>
<td>195</td>
<td>1248.69</td>
<td></td>
<td></td>
<td>Mul. R Sq=.002</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>248300.26</td>
<td>196</td>
<td>1255.54</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The result is shown in Table III for the subsection of pay. On the subsection of the work itself, the Scheffe test did not show any difference between the groups.

HYPOTHESIS 3

H3: Faculty members involved in teaching activities will have a significantly higher mean score on each subsection of the Job Descriptive Index than will faculty members engaged in

a) Research activities

b) Administration activities.
The data relative to Hypothesis 3 are presented in Tables V, VI, and VII.

<table>
<thead>
<tr>
<th>TABLE V</th>
<th>ANALYSIS OF VARIANCE FOR JOB DESCRIPTIVE INDEX</th>
</tr>
</thead>
<tbody>
<tr>
<td>TYPES OF ACTIVITIES (Teaching, Research):</td>
<td></td>
</tr>
<tr>
<td>N=173 (teaching), 45 (research)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variables</th>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>D.F.</th>
<th>Mean Square</th>
<th>F</th>
<th>P</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work Itself</td>
<td>Typ. of A.</td>
<td>13.63</td>
<td>1</td>
<td>13.63</td>
<td>.15</td>
<td>.69</td>
<td>Multiple R = .025</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>9861.54</td>
<td>216</td>
<td>46.04</td>
<td></td>
<td></td>
<td>Mull. R Sq. = .001</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>13985.38</td>
<td>217</td>
<td>63.07</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pay</td>
<td>Typ. of A.</td>
<td>.68</td>
<td>1</td>
<td>.68</td>
<td>.01</td>
<td>.96</td>
<td>Multiple R = .004</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>3736.43</td>
<td>216</td>
<td>17.25</td>
<td></td>
<td></td>
<td>Mull. R Sq. &lt; .001</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>37980.11</td>
<td>217</td>
<td>174.55</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opp. for Promo.</td>
<td>Typ. of A.</td>
<td>552.22</td>
<td>1</td>
<td>552.22</td>
<td>.53</td>
<td>.42</td>
<td>Multiple R = .054</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>6143.17</td>
<td>216</td>
<td>28.43</td>
<td></td>
<td></td>
<td>Mull. R Sq. = .003</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>6595.39</td>
<td>217</td>
<td>290.75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Super- Vision</td>
<td>Typ. of A.</td>
<td>43.64</td>
<td>1</td>
<td>43.64</td>
<td>.23</td>
<td>.62</td>
<td>Multiple R = .073</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>4127.04</td>
<td>216</td>
<td>18.87</td>
<td></td>
<td></td>
<td>Mull. R Sq. = .101</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>4270.68</td>
<td>217</td>
<td>193.45</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>People on Job</td>
<td>Typ. of A.</td>
<td>171.47</td>
<td>1</td>
<td>171.47</td>
<td>.14</td>
<td>.28</td>
<td>Multiple R = .073</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>12343.10</td>
<td>216</td>
<td>56.54</td>
<td></td>
<td></td>
<td>Mull. R Sq. = .005</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>12414.57</td>
<td>217</td>
<td>149.17</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The data in Table V indicate that there were no significant differences between the mean scores of the faculty members who were involved in teaching activities and those of the faculty members who were engaged in research activities on any of the subsections of the Job Descriptive Index. The null hypothesis was retained and research hypothesis 3a was rejected.

The data in Table VI indicate significant differences between the mean scores of faculty members involved in teaching and faculty members engaged in administration activities on four of the subsections of the Job Descriptive Index.
### TABLE VI
ANALYSIS OF VARIANCE FOR JOB DESCRIPTIVE INDEX
TYPES OF ACTIVITIES (Teaching, Administration, N=173; Teaching, 55; Administration)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>D.F.</th>
<th>Mean Square</th>
<th>F</th>
<th>P</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work Itself</td>
<td>Type of A</td>
<td>34.24</td>
<td>1</td>
<td></td>
<td>34.24</td>
<td>.59</td>
<td>.44 Multiple R=.081</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>20503</td>
<td>222</td>
<td>91.75</td>
<td></td>
<td></td>
<td>Mul. R Sq=.003</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>20537</td>
<td>223</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pay</td>
<td>Type of A</td>
<td>442.23</td>
<td>1</td>
<td></td>
<td>442.23</td>
<td>1.77</td>
<td>.13 Multiple R=.007</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>263.42</td>
<td>222</td>
<td>1.18</td>
<td></td>
<td></td>
<td>Mul. R Sq=.007</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>705.65</td>
<td>223</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support.</td>
<td>Type of A</td>
<td>3219.94</td>
<td>1</td>
<td></td>
<td>3219.94</td>
<td>13.61</td>
<td>.01 Multiple R=.275</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>172.11</td>
<td>222</td>
<td>0.77</td>
<td></td>
<td></td>
<td>Mul. R Sq=.076</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>3392.05</td>
<td>223</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>People on Job</td>
<td>Type of A</td>
<td>1477.33</td>
<td>1</td>
<td></td>
<td>1477.33</td>
<td>11.45</td>
<td>.01 Multiple R=.335</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>11.34</td>
<td>222</td>
<td>0.01</td>
<td></td>
<td></td>
<td>Mul. R Sq=.001</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>1488.67</td>
<td>223</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mean scores of faculty members on the Job Descriptive Index for each type of activity are presented in Table VII.

### TABLE VII
MEAN SCORES OF THE FACULTY MEMBERS WHEN CATEGORIZED BY TYPES OF ACTIVITIES

<table>
<thead>
<tr>
<th>Variables</th>
<th>Teaching</th>
<th>Research</th>
<th>Administration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work Itself</td>
<td>37.95</td>
<td>18.61</td>
<td>14.61</td>
</tr>
<tr>
<td>Pay</td>
<td>19.43</td>
<td>20.75</td>
<td>14.61</td>
</tr>
<tr>
<td>Support for Promotion</td>
<td>21.59</td>
<td>20.11</td>
<td>16.26</td>
</tr>
<tr>
<td>Supervision</td>
<td>27.59</td>
<td>17.61</td>
<td>47.58</td>
</tr>
<tr>
<td>People on Job</td>
<td>33.25</td>
<td>37.41</td>
<td>45.51</td>
</tr>
</tbody>
</table>

From Table VII it becomes apparent that faculty members engaged in administration activities had a higher mean score on each subsection of the Job Descriptive Index. There were
significant differences between the mean scores of the groups on four of the measures—but in a different direction from that hypothesized. The null hypothesis 3b was rejected. The research hypothesis was also rejected.

**HYPOTHESIS 4**

**H4:** There will be significant interaction effects between gender and rank of faculty members on subsections of the Job Descriptive Index mean scores.

The information pertaining to Hypothesis 4 is presented in Table VIII.

**TABLE VIII**

**MULTIVARIATE AND UNIVARIATE ANALYSIS OF VARIANCE**

Summary Table Hypothesis 4

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Variables</th>
<th>D.F.</th>
<th>Lambda</th>
<th>Error M Square</th>
<th>F</th>
<th>P</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Gender/ Rank</td>
<td>10</td>
<td>.94</td>
<td>.89</td>
<td>.84</td>
<td>.86</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Work iteself 2</td>
<td>2</td>
<td>.74</td>
<td>.111.62</td>
<td>2.24</td>
<td>.10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Opp for Pro.</td>
<td>315.87</td>
<td>.111.62</td>
<td>7.14</td>
<td>.35</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Supervision</td>
<td>311.33</td>
<td>.122.44</td>
<td>7.14</td>
<td>.35</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>People on Job</td>
<td>183.20</td>
<td>.77.49</td>
<td>12.23</td>
<td>.01</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The MANOVA, multivariate analysis of variance, was used and Wilks' lambda was not significant with 10 and 534 degrees of freedom (Wilks' lambda=.94, df= 10/534, F= 1.40, P=.175). Statistical analysis indicated that when faculty members, with respect to gender, were divided into three rank groups (professor, associate professor, and assistant
professor), there were no significant differences between the mean scores of male faculty members and of female faculty members on the subsections of the Job Descriptive Index. Research hypothesis 4 was rejected.

Univariate analysis of variance indicated that there were no significant differences between the mean scores of male and female faculty members on the four subsections of pay, opportunities for promotion, supervision, and people on the job. The test was significant at the .05 level for the subsection of the work itself (df=2/271, F=2.94, P=.05). Table IX presents the mean scores of male and female faculty members with regard to rank.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Professor Male</th>
<th>Professor Female</th>
<th>Associate Prof. Male</th>
<th>Associate Prof. Female</th>
<th>Assistant Prof. Male</th>
<th>Assistant Prof. Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work itself</td>
<td>39.90</td>
<td>40.23</td>
<td>38.16</td>
<td>37.42</td>
<td>39.04</td>
<td>39.74</td>
</tr>
<tr>
<td>Pay</td>
<td>24.80</td>
<td>33.00</td>
<td>20.41</td>
<td>13.10</td>
<td>14.10</td>
<td>15.10</td>
</tr>
<tr>
<td>Opportunities for Promotion</td>
<td>23.54</td>
<td>22.17</td>
<td>21.52</td>
<td>19.11</td>
<td>19.74</td>
<td>22.74</td>
</tr>
<tr>
<td>Supervision</td>
<td>40.39</td>
<td>37.45</td>
<td>40.54</td>
<td>31.44</td>
<td>41.50</td>
<td>26.45</td>
</tr>
<tr>
<td>People on Job</td>
<td>40.90</td>
<td>41.50</td>
<td>38.25</td>
<td>18.11</td>
<td>27.23</td>
<td>25.45</td>
</tr>
</tbody>
</table>

The differences between the mean scores presented in Table IX shows that male and female professors were more satisfied with the work itself and pay than were associate or assistant professors. Women assistant professors
reported more satisfaction on the subsections of opportunities for promotion, supervision, and people on the job.

Male professors had a higher mean score than female professors on two out of five subsections of the Job Descriptive Index whereas female professors reported higher mean scores on three subsections. Female assistant professors had higher mean scores on all five subsections of the Job Descriptive Index than did male assistant professors or male and female associate professors.

**HYPOTHESIS 5**

H5: There will be a significant interaction effect between faculty ranks and types of activity of faculty members on mean scores of each subsection of the Job Descriptive Index.

Information relative to Hypothesis 5 is presented in Table X.

**TABLE X**

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Variables</th>
<th>Multivariate</th>
<th>Univariate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>F</td>
<td>p</td>
</tr>
<tr>
<td>Rank/ Types of Act.</td>
<td></td>
<td></td>
<td>Lambda</td>
</tr>
<tr>
<td>Work Itself</td>
<td>39</td>
<td>70.58</td>
<td>.0000</td>
</tr>
<tr>
<td>Pay</td>
<td>260</td>
<td>205.33</td>
<td>.0000</td>
</tr>
<tr>
<td>Imp. for Pr.</td>
<td>314.53</td>
<td>662.67</td>
<td>.0000</td>
</tr>
<tr>
<td>Supervision</td>
<td>124.09</td>
<td>224.17</td>
<td>.0000</td>
</tr>
<tr>
<td>People on Job</td>
<td>181.11</td>
<td>181.60</td>
<td>.0000</td>
</tr>
</tbody>
</table>

Lambda 2 = .75
The data in Table X indicate that there were no significant interaction effects between rank and types of activity of faculty members on the subsections of the Job Descriptive Index (Wilks' lambda=.82, df=45/1148, F=1.11, P=.275).

Univariate analysis of variance with degree of freedom of 9,260 indicated that the test was significant on the mean scores of faculty members on the subsection of opportunities for promotion (.04 level). This means that when faculty members, with respect to rank, were divided as to types of activity, there was a significant difference between the mean scores of faculty members on the subsection of opportunities for promotion. According to hypotheses 2 and 3, there was no significant difference on this particular subsection; but the effects of interaction were significant.

A multiple comparison procedure, the Scheffe test, was performed to determine location of difference among the groups. This information is presented in Table XI.

<table>
<thead>
<tr>
<th>TABLE XI</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCHEFFE TEST (Follow-up Procedure for Hypothesis 5)</td>
</tr>
<tr>
<td>Opportunities for Promotion, Subsection of the Job Descriptive Index</td>
</tr>
<tr>
<td>Assistant professors when categorized by Types of Activities</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Types of Activities</th>
<th>N=55</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching</td>
<td>Group 1</td>
</tr>
<tr>
<td>Research</td>
<td>Group 2</td>
</tr>
<tr>
<td>Administration</td>
<td>Group 3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mean</th>
<th>Group</th>
<th>N=23</th>
</tr>
</thead>
<tbody>
<tr>
<td>22.14</td>
<td>GRP 1</td>
<td>N= 4</td>
</tr>
<tr>
<td>22.50</td>
<td>GRP 3</td>
<td>N= 4</td>
</tr>
<tr>
<td>31.86</td>
<td>GRP 2</td>
<td>N=82</td>
</tr>
</tbody>
</table>

(*) Denotes Pairs of Groups Significantly Different at .05 Level.
An examination of Table XI shows that there was a significant difference between the means of the assistant professors who were involved in teaching and the means of those who were involved in research. Research hypothesis 5 was rejected.

**HYPOTHESIS 6**

**H6:** There will be significant interaction effects between gender and types of activity of faculty members on each subsection of the Job Descriptive Index mean scores.

Information pertaining to Hypothesis 6 is presented in Table XII.

**TABLE XII**

<table>
<thead>
<tr>
<th>Multivariate and Univariate Analysis of Variance Summary Table Hypothesis 6</th>
<th>Lambda P = .352</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Variation Variables</strong></td>
<td><strong>D.F.</strong></td>
</tr>
<tr>
<td>Genders of Act.</td>
<td>25</td>
</tr>
<tr>
<td>Types of Act.</td>
<td>971</td>
</tr>
<tr>
<td>Work Itself</td>
<td>73.45</td>
</tr>
<tr>
<td>Pay</td>
<td>314.24</td>
</tr>
<tr>
<td>Recognition</td>
<td>314.24</td>
</tr>
<tr>
<td>Supervision</td>
<td>311.47</td>
</tr>
<tr>
<td>People on Job</td>
<td>130.73</td>
</tr>
</tbody>
</table>

The data in Table XII shows that there were no significant interaction effects between gender and types of activity of faculty members on mean scores of the subsections of the Job Descriptive Index (Wilks' lambda= .93, df=25/971, P=.868). This indicates that when male and
female faculty members were divided with respect to types of activity, there were no significant interaction effects on mean scores of the subsections of the criterion variables. Univariate analysis of variance was used to test the significance of interaction between the sources of variation. There was no significant interaction for mean scores of faculty members on any subsection of the Job Descriptive Index. Research hypothesis 6 was rejected.

HYPOTHESIS 7

H7: There will be significant differences in mean scores on each subsection of the Job Descriptive Index when faculty members are stratified according to each of the following independent variables:

a) Faculty members 40 years of age or older will have higher mean scores than faculty members who are less than 40 years of age;

b) Tenured faculty members will have higher mean scores than nontenured faculty members;

c) Faculty members with more than 10 years of experience will have higher mean scores than faculty members with 10 years of experience or less;

Information relative to Hypothesis 7 is presented in Tables XIII-XVIII.

The data in Table XIII indicate that on four subsections (the work itself, pay, supervision, and people on the job)
there were no significant differences, so the null hypotheses were retained and the research hypotheses were rejected. On the subsection of opportunities for promotion, there was a significant difference; therefore, the null hypothesis was rejected.

Information concerning the significant differences between age categories is shown in Table XIV.

TABLE XIV
MEAN SCORES OF THE FACULTY MEMBERS WHEN CATEGORIZED BY AGE

<table>
<thead>
<tr>
<th>Variables</th>
<th>Under 40</th>
<th>40 and Over</th>
</tr>
</thead>
<tbody>
<tr>
<td>work itself</td>
<td>38.13</td>
<td>18.29</td>
</tr>
<tr>
<td>Pay</td>
<td>18.38</td>
<td>21.68</td>
</tr>
<tr>
<td>Opportunities</td>
<td>29.74</td>
<td>19.48</td>
</tr>
<tr>
<td>Promotion</td>
<td>39.62</td>
<td>39.60</td>
</tr>
<tr>
<td>Supervision</td>
<td>38.54</td>
<td>40.04</td>
</tr>
<tr>
<td>People On Job</td>
<td>38.54</td>
<td>40.04</td>
</tr>
</tbody>
</table>
The data in Table XIV show that mean scores of the younger faculty members were higher than those of the older faculty members in the area of opportunities for promotion. The hypothesis that the older faculty members would have higher mean scores than the younger faculty members, as well as the null hypothesis, was rejected. The direction of the result was different from that which was hypothesized. The mean scores of the younger faculty members were higher than those of the older faculty members.

Information concerning the second section of Hypothesis 7 is presented in Table XV.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>D.F.</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work</td>
<td>Status</td>
<td>23964.84</td>
<td>1</td>
<td>23964.84</td>
<td>44</td>
<td>.00</td>
<td>Multiple R = .41</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>24033.81</td>
<td>276</td>
<td>0.07</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>48098.65</td>
<td>277</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pay</td>
<td>Status</td>
<td>1645.06</td>
<td>1</td>
<td>1645.06</td>
<td>3.14</td>
<td>.08</td>
<td>Multiple R = .11</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>50350.12</td>
<td>275</td>
<td>0.18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>51995.18</td>
<td>276</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adv. for</td>
<td>Status</td>
<td>4734.73</td>
<td>1</td>
<td>4734.73</td>
<td>8.12</td>
<td>.00</td>
<td>Multiple R = .14</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>73029.11</td>
<td>275</td>
<td>0.26</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>77763.84</td>
<td>276</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supervision</td>
<td>Status</td>
<td>123.04</td>
<td>1</td>
<td>123.04</td>
<td>0.23</td>
<td>.65</td>
<td>Multiple R = .02</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>14332.62</td>
<td>275</td>
<td>0.05</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>14455.66</td>
<td>276</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>People on Job</td>
<td>Status</td>
<td>27</td>
<td>1</td>
<td>27</td>
<td>0.1</td>
<td>.74</td>
<td>Multiple R = .01</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>142.91</td>
<td>275</td>
<td>0.05</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>145.61</td>
<td>276</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

An examination of Table XV shows that there were no significant differences between the mean scores of the
faculty members on three subsections of the Job Descriptive Index with respect to faculty status. These areas were the work itself, supervision, and people on the job. The null hypotheses were retained, so the research hypotheses were rejected.

There were significant differences between the mean scores of faculty members when categorized by faculty status on the subsections of present pay and opportunities for promotion at the <.01 and .02 level. The tenured faculty members reported significantly higher mean scores than the nontenured faculty members in regard to satisfaction with their pay.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Tenured</th>
<th>Nontenured</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work itself</td>
<td>38.49</td>
<td>37.67</td>
</tr>
<tr>
<td>Pay</td>
<td>22.71</td>
<td>17.13</td>
</tr>
<tr>
<td>Opportunities for promotion</td>
<td>25.38</td>
<td>25.95</td>
</tr>
<tr>
<td>Supervision</td>
<td>39.55</td>
<td>39.80</td>
</tr>
<tr>
<td>People on job</td>
<td>39.99</td>
<td>12.68</td>
</tr>
</tbody>
</table>

Information in Table XVI indicates that nontenured faculty members had higher mean scores than tenured faculty members on the subsection of opportunities for promotion. This means that the result was in a different direction from that which was hypothesized. Both the null hypothesis and the research hypothesis were rejected.
One possible interpretation is that tenured faculty members have already been promoted to the highest level, whereas nontenured faculty members still have opportunities for promotion.

Information concerning the third section of Hypothesis 7 is presented in Table XVII.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>D.F.</th>
<th>Mean Square</th>
<th>F</th>
<th>P</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work</td>
<td>Yrs. of Ex.</td>
<td>8.84</td>
<td>1</td>
<td>8.84</td>
<td>8.84</td>
<td>1.04</td>
<td>Multiple R = .175</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>193.29</td>
<td>193</td>
<td>1.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>202.13</td>
<td>194</td>
<td>1.03</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pay</td>
<td>Yrs. of Ex.</td>
<td>0.96</td>
<td>1</td>
<td>0.96</td>
<td>0.96</td>
<td>0.16</td>
<td>Multiple R = .195</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>6.54</td>
<td>65</td>
<td>0.10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>7.50</td>
<td>66</td>
<td>0.11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>App. for Prom.</td>
<td>Yrs. of Ex.</td>
<td>0.31</td>
<td>1</td>
<td>0.31</td>
<td>0.31</td>
<td>0.31</td>
<td>Multiple R = .195</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>1.35</td>
<td>135</td>
<td>0.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>1.66</td>
<td>136</td>
<td>0.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supervision</td>
<td>Yrs. of Ex.</td>
<td>39.05</td>
<td>1</td>
<td>39.05</td>
<td>39.05</td>
<td>3.64</td>
<td>Multiple R = .143</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>492.60</td>
<td>492</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>531.65</td>
<td>533</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>People in the Tenure</td>
<td>Yrs. of Ex.</td>
<td>33.23</td>
<td>1</td>
<td>33.23</td>
<td>33.23</td>
<td>3.22</td>
<td>Multiple R = .105</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>394.34</td>
<td>394</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>427.57</td>
<td>395</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The data in Table XVII show that there were no significant differences between the mean scores of faculty members with respect to years of experience on three subsections of the Job Descriptive Index. These subsections were the work itself, supervision, and people on the job. The null hypotheses were retained and the research hypotheses were rejected. There were significant differences on the subsec-
tions of present pay and opportunities for promotion.

ANOVA, analysis of variance, was used and indicates that the calculated F with degrees of freedom 1.275 was significant at the .01 level on the subsection of present pay and the <.01 level on the subsection of opportunities for promotion. On the subsection of pay, the null hypothesis was rejected and the research hypothesis was retained. Faculty members with more than 10 years of experience had more positive attitudes toward pay than did faculty members with less than 10 years of experience.

Mean scores of faculty members when categorized by years of experience are presented in Table XVIII.

<table>
<thead>
<tr>
<th>Variables</th>
<th>10 Years or Less</th>
<th>More than 10 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work itself</td>
<td>37.59</td>
<td>38.36</td>
</tr>
<tr>
<td>Pay</td>
<td>17.68</td>
<td>21.67</td>
</tr>
<tr>
<td>Report for</td>
<td>25.89</td>
<td>25.29</td>
</tr>
<tr>
<td>Promotion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supervision</td>
<td>38.45</td>
<td>39.72</td>
</tr>
<tr>
<td>People on</td>
<td>38.25</td>
<td>40.22</td>
</tr>
</tbody>
</table>

The data in Table XVIII indicate that in the area of promotion, faculty members with 10 years of experience or less had higher mean scores than the other group. The research hypothesis and the null hypothesis were both rejected, since the direction of the results was different from that which was hypothesized.
ADDITIONAL FINDINGS

Since the theoretical basis of the study was Herzberg's Two-Factor theory, a factor analysis procedure was applied to the data. The purpose was to determine factors relative to job satisfaction, extracting common factor variance from dependent variables.

All eight independent variables were intercorrelated with the five subsections of the dependent variable. The Pearson Correlation Coefficient was performed through the use of SPSS at the North Texas State University Computer Center and a correlation matrix was constructed and is presented in Table XIX.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Work</th>
<th>Pay</th>
<th>Promotion</th>
<th>Supervision</th>
<th>People</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>-0.132</td>
<td>-0.0292</td>
<td>-0.252</td>
<td>-0.155</td>
<td>0.77</td>
</tr>
<tr>
<td>Age</td>
<td>-0.144</td>
<td>-0.199</td>
<td>-0.275**</td>
<td>-0.199</td>
<td>0.044</td>
</tr>
<tr>
<td>Degree</td>
<td>0.014</td>
<td>0.0066</td>
<td>-0.648</td>
<td>-0.0066</td>
<td>0.054</td>
</tr>
<tr>
<td>College A/1</td>
<td>0.140</td>
<td>0.0426</td>
<td>-0.124</td>
<td>-0.275**</td>
<td>0.176</td>
</tr>
<tr>
<td>Rank</td>
<td>-0.108</td>
<td>-0.259**</td>
<td>0.0806</td>
<td>-0.199</td>
<td>0.011</td>
</tr>
<tr>
<td>Status</td>
<td>-0.106</td>
<td>-0.184**</td>
<td>-0.555**</td>
<td>-0.184**</td>
<td>0.161</td>
</tr>
<tr>
<td>Years Exp.</td>
<td>0.121</td>
<td>0.157**</td>
<td>-0.201**</td>
<td>-0.201**</td>
<td>0.361</td>
</tr>
<tr>
<td>Activities</td>
<td>0.034</td>
<td>0.315**</td>
<td>-0.0959</td>
<td>-0.147**</td>
<td>0.156**</td>
</tr>
</tbody>
</table>

* Significant at .01 Level  ** Significant at .001 Level

An examination of Table XIX will reveal that there were statistically significant correlations between the independent variables and criterion variables at the (.01) and (.001) levels. Although the correlation coefficients were statistically significant, the proportion of the coefficients ranging between .2433 to -.2725 indicates a low predictive value.
A principal factor rotation was available at the Computer Center and was calculated. The data is presented in Tables XX and XXI.

**TABLE XX**

FACTOR ANALYSIS-UNWEIGHTED LEAST SQUARES (ULS)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Communality</th>
<th>Factor I</th>
<th>Factor II</th>
<th>Per cent of Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work Itself</td>
<td>.35200</td>
<td>1</td>
<td></td>
<td>36.0</td>
</tr>
<tr>
<td>Pay</td>
<td>.99900</td>
<td>2</td>
<td></td>
<td>13.1</td>
</tr>
<tr>
<td>Promotion</td>
<td>.21640</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supervision</td>
<td>.42902</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>People on Job</td>
<td>.45797</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Two factors were extracted with Unweighted Least Squares and minimum eigenvalue of .80. Factor I, composed of the work itself, accounted for 36 per cent of the variance, with eigenvalue of 1.79820. Factor II consisted of the subsection of pay and accounted for 13.1 per cent of the variance with eigenvalue of .65618.

**TABLE XXI**

FACTOR MATRIX (ULS EXTRACTION)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Factor I</th>
<th>Factor II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pay</td>
<td>.73923</td>
<td>- .57264</td>
</tr>
<tr>
<td>People on Job</td>
<td>.61817</td>
<td></td>
</tr>
<tr>
<td>Supervision</td>
<td>.60715</td>
<td></td>
</tr>
<tr>
<td>Work Itself</td>
<td>.54313</td>
<td></td>
</tr>
<tr>
<td>Promotion</td>
<td>.45212</td>
<td></td>
</tr>
</tbody>
</table>

The factor matrix with Unweighted Least Squares determined two factors. Factor I was composed of all five
subsections of the Job Descriptive Index and Factor II was the subsection of pay. The subsection of pay was loaded on both factors indicating its importance in job satisfaction.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Factor I</th>
<th>Factor II</th>
</tr>
</thead>
<tbody>
<tr>
<td>People on Job</td>
<td>.66428</td>
<td></td>
</tr>
<tr>
<td>Supervision</td>
<td>.63389</td>
<td></td>
</tr>
<tr>
<td>Work Itself</td>
<td>.58233</td>
<td>.97413</td>
</tr>
<tr>
<td>Promotion</td>
<td>.43384</td>
<td></td>
</tr>
<tr>
<td>Pay</td>
<td></td>
<td>.57413</td>
</tr>
</tbody>
</table>

Factor Transformation Matrix Between Factor I and II is .57413

The varimax rotated factor matrix, statistical output from the calculation of factor analysis, determined two factors. Factor I consisted of the work itself, opportunities for promotion, supervision, and people on the job. Factor II was pay, which was not loaded on the other factor. The factor transformation matrix on the varimax rotation between factor I and factor II was .57.

The Two-Factor theory was partially supported. The results of factor analysis indicate that faculty members perceived job satisfaction variables as two factors, but the factors were loaded differently from those in the Herzberg theory. Factor I was composed of the supervision and the people on the job variables in addition to the motivators (the work itself and opportunities for promotion). The subsection of pay was loaded on factor II as the only hygiene factor.
Since the college faculty members loaded two factors differently from the norms, the development of a new instrument becomes a possible suggestion for further research.
Chapter V

SUMMARY, FINDINGS, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS FOR FURTHER RESEARCH

Data and information relative to job satisfaction were gathered from 304 full-time faculty members at North Texas State University. Job satisfaction was measured through the use of the Job Descriptive Index and demographic information was collected by means of a faculty data sheet.

One purpose of this study was to compare views of job satisfaction of faculty members with regard to their gender (Hypothesis 1). The 304 participants in the study were comprised of 238 male (78.3 per cent) and 66 female faculty members (21.7 per cent).

The second purpose of the research was to study perception of job satisfaction among faculty members with regard to their rank (Hypothesis 2). The 304 respondents consisted of 118 professors (38.8 per cent), 95 associate professors (31.3 per cent), and 91 assistant professors (29.9 per cent).

The third purpose of the study was to determine whether types of activity of faculty members were related to their perception of job satisfaction (Hypothesis 3). There were
208 respondents who spent more than 50 per cent of their time in teaching, 53 respondents who spent more than 50 per cent of their time in research, and 42 respondents who spent more than 50 per cent of their time in administration.

In addition, the interaction effects of gender and rank, gender and types of activity, and rank and types of activity in relation to the criterion variable were tested through the use of statistical analysis (Hypotheses 4, 5, 6).

The fourth purpose of this research was to measure the relationship of job satisfaction of faculty members to their demographic factors (Hypothesis 7). First, the age categories consisted of 82 respondents under 40 years of age (27 per cent) and 222 faculty members 40 years old and over (73 per cent). Second, the 304 participants included 89 nontenured (29.3 per cent) and 215 tenured (70.7 per cent) faculty members. Third, with respect to the years of experience in higher education, 90 individuals had 10 years of experience or less (29.6 per cent), whereas 214 faculty members had over 10 years of experience (70.4 percent).

Since the theoretical basis for the study was Herzberg's theory of Motivation-Hygiene, one of the purposes was to evaluate the applicability of the theory in regard to faculty members.

The design of the study was 2 X 3 and 3 X 3. The independent variables were gender, rank, and types of activity. Gender had two facets, male and female; rank had three
levels, professor, associate professor, and assistant professor; types of activities included three categories, teaching, research, and administration. The additional independent variables which were tested in Hypothesis 7 were age, faculty status, and years of experience. Age had two levels, under 40 years of age and 40 years of age and over; faculty status had two levels, tenured and nontenured; years of experience had five levels, which in the study were combined to two levels—under 10 years of experience and over 10 years of experience. The dependent variables were the scores on the subsections of the Job Descriptive Index.

The instrument which was prepared to collect the data consisted of two parts, the Job Descriptive Index and the faculty data sheet. The Job Descriptive Index measured five facets of job satisfaction based on Herzberg's Motivation-Hygiene theory. The five areas were: the work itself, pay, opportunities for promotion, supervision, and co-workers. The second part of the questionnaire consisted of eight questions dealing with demographic characteristics. These questions were about gender, age, educational degree, college affiliation, faculty rank, faculty status, years of experience, and types of activity.

For the purpose of statistical analysis, this study utilized analysis of variance, multivariate two-way analysis of variance, multiple comparison procedures, and factor analysis. From multiple comparison procedures, the Scheffe
test was used because of its advantage in not being limited to samples of equal size and to simple pairwise comparisons. Through the use of these statistical analyses, the hypotheses were tested for significant differences among the means.

RESEARCH FINDINGS ON HYPOTHESIS 1

Hypothesis 1 stated that male faculty members will have a significantly higher mean score on each subsection of the Job Descriptive Index than will female faculty members. The research hypothesis was rejected; there were no significant differences between male and female faculty members on the five subsections of the Job Descriptive Index mean scores. Analysis of variance was applied and data indicated that, statistically, there were no significant differences, but the table of means showed that in the four areas of the work itself, pay, opportunities for promotion, and supervision, male faculty members' mean scores were slightly higher than those of female faculty members. Only in the area of co-workers did the female faculty members have a slightly higher mean score. However, the mean scores for both groups in three areas were relatively high (the work itself, supervision, and co-workers), indicating higher levels of job satisfaction, as compared to the areas of pay and opportunities for promotion, where the scores were relatively low.
RESEARCH FINDINGS ON HYPOTHESIS 2

Research hypothesis 2 stated that faculty members with the rank of professor will have a significantly higher mean score on each subsection of the Job Descriptive Index than will faculty members with the rank of

a) Associate professor
b) Assistant professor.

Research hypothesis 2a was retained on two subsections, the work itself and pay; it was rejected on three subsections—opportunities for promotion, supervision, and people on the job. The data indicate that professors and associate professors had essentially the same level of job satisfaction with regard to perception of opportunities for promotion, supervision, and people on the job. There were significant differences between the mean scores of the groups on the subsections of the work itself and pay. The mean scores of the professors were higher than the mean scores of the associate professors, indicating that they were more satisfied than the associate professors with the work itself as well as present pay.

Research hypothesis 2b was rejected on four subsections: the work itself, opportunities for promotion, supervision, and people on the job. The results indicate that there were no significant differences between the mean scores of professors and assistant professors on these subsections. The perception of job satisfaction between the groups was essen-
tially at the same level. The research hypothesis 2b was retained on the subsection of pay, indicating a significant difference between professors and assistant professors. Professors were more satisfied with present pay than assistant professors.

A multiple comparison procedure, the Scheffe test, confirmed that there were significant differences (at the .05 level) between the mean scores of group 1 (professors), group 2 (associate professors), and group 3 (assistant professors) with regard to the subsection of pay.

**RESEARCH FINDINGS ON HYPOTHESIS 3**

Research hypothesis 3 stated that faculty members involved in teaching activities will have a significantly higher mean score on each subsection of the Job Descriptive index than will faculty members engaged in

a) Research activities

b) Administration activities.

Research hypothesis 3a was rejected. ANOVA indicated that there were no significant differences between the mean scores of faculty members who were involved in teaching activities and faculty members who were involved in research activities with regard to the subsections of the Job Descriptive Index. This means that both groups had essentially the same level of job satisfaction with respect to teaching and research activities.
The null hypothesis 3b was rejected. The research hypothesis was also rejected. There were significant differences between the mean scores of faculty members involved in teaching activities and the mean scores of faculty members who were engaged in administrative activities on the subsections of the Job Descriptive Index. Significant differences between the groups' mean scores existed, but in an opposite direction from that which was hypothesized. It was found that faculty members involved in administrative activities reported a higher level of job satisfaction on each subsection of the criterion variable than did faculty members in teaching activities.

RESEARCH FINDINGS ON HYPOTHESIS 4

Research hypothesis 4 stated that there will be a significant interaction effect between gender and rank of faculty members on each subsection of the Job Descriptive Index.

Research hypothesis 4 was rejected. Multivariate analysis of variance indicated that when faculty members were divided with respect to their gender into three rank groups, there were no significant interaction effects between gender and rank. This means that there was essentially the same level of job satisfaction among the groups.

Univariate analysis of variance showed that on the four subsections of pay, opportunities for promotion, supervision, and people on the job, male and female faculty members
from the three rank groups had essentially the same level of job satisfaction. On the subsection of the work itself, male and female professors were more satisfied than male and female associate or assistant professors.

RESEARCH FINDINGS ON HYPOTHESIS 5

Research hypothesis 5 stated that there will be a significant interaction effect between faculty rank and the types of activity of faculty members on each subsection of the Job Descriptive Index.

Research hypothesis 5 was rejected. Multivariate analysis of variance showed no significant interaction effects of rank and types of activity on the mean scores of the faculty members on the Job Descriptive Index. Univariate analysis of variance indicated, however, that on the subsection of opportunities for promotion, there was a significant difference. A Scheffe test determined the location of the difference among the groups. There was a significant difference between the mean scores of the assistant professors who were involved in teaching and those who were involved in research activities. Assistant professors engaged in research activities had a significantly higher perception of promotion opportunities than did assistant professors in teaching. This might be because promotion policy at the University rewards research more than teaching.
RESEARCH FINDINGS ON HYPOTHESIS 6

Research hypothesis 6 stated that there will be a significant interaction effect between gender and types of activity of faculty members on each subsection of the Job Descriptive Index.

Hypothesis 6 was rejected. Multivariate and Univariate analysis of variance indicated that there were no significant interaction effects between gender and types of activity on the subsections of Job Descriptive Index mean scores.

RESEARCH FINDINGS ON HYPOTHESIS 7

Hypothesis 7 stated that there will be a significant difference in mean scores on each subsection of the Job Descriptive Index when faculty members are stratified according to age, faculty status, and years of experience.

In regard to the first part of Hypothesis 7, for the four subsections of the work itself, pay, supervision, and people on the job, the null hypotheses were retained and research hypotheses were rejected. It was found that level of job satisfaction among age categories was essentially the same as for faculty members in the stated areas. On the subsection of opportunities for promotion, the results indicate that younger faculty members were significantly more satisfied than older faculty members. The research hypothesis and the null hypothesis were both rejected. Faculty members
under 40 years of age still have opportunities for promotion, whereas faculty members 40 years of age or more have already been promoted, so their perceptions of promotion may be different.

Faculty status in relation to job satisfaction was tested in the second part of Hypothesis 7. The research hypotheses were rejected in the three areas of the work itself, supervision, and people on the job. It was found that the level of job satisfaction among tenured and nontenured faculty members was the same in those stated areas and the null hypotheses were retained. Differences occurred in the areas of present pay and opportunities for promotion. Tenured faculty members reported a higher level of satisfaction in contrast to nontenured faculty members on the subsection of pay. The null hypothesis was rejected and the research hypothesis was retained. On the subsection of opportunities for promotion, nontenured faculty members had a significantly higher level of job satisfaction than tenured faculty members. The research hypothesis and the null hypothesis were both rejected due to results in the opposite direction from what was hypothesized.

Years of experience in relation to job satisfaction was tested in the third part of Hypothesis 7. The level of job satisfaction for faculty members with regard to their years of experience was essentially the same on the subsections of the work itself, supervision, and people on the job. The
null hypotheses were retained and the research hypotheses were rejected. On the subsections of pay and opportunities for promotion, there were significant differences. Faculty members with more than 10 years of experience were more satisfied with their pay than faculty members with 10 years of experience or less. The null hypothesis was rejected and the research hypothesis was accepted. On the subsection of promotion, faculty members with 10 years of experience or less were more satisfied than the other group. The direction was different from that hypothesized, so the null hypothesis and the research hypothesis were rejected.

ADDITIONAL FINDINGS

As previously noted, Herzberg's Two-Factor theory was partially supported. With the use of Unweighted Least Squares and a minimum eigenvalue of .80 two factors were extracted. Factor I was composed of all five subsections of the Job Descriptive Index and accounted for 36 per cent of the variance. Factor II was denoted as the subsection of pay and accounted for 13.1 per cent of the variance. It was found that pay was loaded on both factors with Unweighted Least Squares which indicated its importance in job satisfaction.

With the use of the Varimax Rotated Factor Matrix two factors were determined. Factor I consisted of the work itself, opportunities for promotion, supervision, and people on the job. Factor II consisted of the subsection of pay.
Statistical analysis determined that faculty members considered job satisfaction variables as two factors which were loaded differently from the theory. Motivator factors consisted of four subsections and hygiene factors were limited to one. It should be noted that since college faculty members perceived and loaded two factors differently from the norm, modification of the instrument or construction of a new instrument is suggested.

CONCLUSIONS

The following conclusions are based upon findings of the study.

1. Gender has no effect on the perception of job satisfaction. Male and female college faculty members were satisfied to the same extent with their jobs. This supports the conclusions of Gonnet (4) and Openshaw (8) and contradicts the conclusions of Hollon and Gemmill (6).

2. Rank has an effect on the perception of job satisfaction with regard to the areas of the work itself and present pay. Professors were more satisfied than associate or assistant professors in regard to those two subjects. Assistant professors reported more satisfaction on their jobs than did associate professors, except in the area of present pay.

3. Type of activity has an effect on the perception of job satisfaction. Faculty members in administration
reported a higher level of job satisfaction than did those in teaching or research. This might be attributed to the monetary advantages attached to administrative appointments.

4. As a faculty member becomes older, his job satisfaction increases. This supports the conclusions of Kepple (7) and Poosawtsee (9). It contradicts the conclusions of Wozniak (10).

5. Tenured faculty members have higher levels of job satisfaction than nontenured faculty members. This supports the conclusions of Kepple (7) and Enos (2).

6. Job satisfaction increases with additional years of experience. This supports the conclusions of Poosawtsee (9) and Hodge (5). It contradicts the conclusions of Wozniak (10).

7. The areas of present pay and opportunities for promotion are the most significant predictors of job satisfaction. This contradicts the conclusions of Corwin (1).

IMPLICATIONS

As job satisfaction determinants become more important in higher education institutions, university administrators and department chairpersons should be knowledgeable in the areas of job satisfaction which are most significant. These areas are present pay and the system of promotion.

Results of the study showed that mean scores of all faculty members were relatively high in the areas of the
work itself, supervision, and people on the job, as compared to mean scores on present pay and opportunities for promotion. The highest possible score on each subsection was 54, and the lowest score was zero. These two areas need more consideration and attention. Improvement in faculty members' job satisfaction might result in higher levels of job performance. As Fedler (3) indicated, a satisfied faculty member may be more productive than a dissatisfied one. He would be well adjusted to his students, co-workers, and administrators in terms of interpersonal relationships.

An examination of data in this study indicates a low proportion of Multiple R Squares. Two possible interpretations could be given for the low correlation between the independent and dependent variables. First, the nature of the instrument may have caused it. However, the theory of Motivation-Hygiene is the basis for the instrument, and norms have been constructed for it; but it might not be suitable for professional jobs, such as college or university professors. Second, there are areas such as freedom on the job, student advisement, and recognition, which are important for college faculty members. The instrument did not cover them and this may be considered as another source of low Multiple R Squares.
RECOMMENDATIONS FOR FURTHER RESEARCH

Job satisfaction level varies from group to group and is related to different situations and variables. In recent studies, as well as the present study, the critical areas of job satisfaction are present pay and opportunities for promotion. Administrators should pay close attention to the improvement of these areas. In relation to the two factors noted above, the following recommendations are suggested:

1. Further research should be implemented in order to identify additional factors that could affect faculty members' job satisfaction.

2. Further research and studies should take place in order to find an appropriate salary plan which would satisfy all faculty members, regardless of their gender, rank, or types of activity.

3. The system of promotion should undergo further investigation and research in order to find factors essential to the administration of a fair and nonpolitical promotion system which would result in higher job satisfaction.

4. Factor analysis indicates that college faculty members perceived job satisfaction in relation to two factors and loaded them differently from the norm, therefore, modification of the instrument or development of a new instrument appropriate to this type of job is recommended.


APPENDIXES
APPENDIX A

INSTRUMENT
THE
JOB
DESCRIPTIVE
INDEX

CODE NUMBER

Company

City

Please fill in the above blanks and then turn the page . . . .

Bowling Green State University, 1975
Think of your present work. What is it like most of the time? In the blank beside each word given below, write

____ for "Yes" if it describes your work
____ for "No" if it does NOT describe it
____ if you cannot decide

WORK ON PRESENT JOB

____ Fascinating
____ Routine
____ Satisfying
____ Boring
____ Good
____ Creative
____ Respected
____ Hot
____ Pleasant
____ Useful
____ Tiresome
____ Healthful
____ Challenging
____ On your feet
____ Frustrating
____ Simple
____ Endless
____ Gives sense of accomplishment

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

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

SUPERVISION ON PRESENT JOB

Asks my advice
Hard to please
Impolite
Praises good work
Tactful
Influential
Up-to-date
Doesn't supervise enough
Quick tempered
Tells me where I stand
Annoying
Stubborn
Knows job well
Bad
Intelligent
Leaves me on my own
Around when needed
Lazy

Please go on to the next page . . . . . . .
Think of the majority of the people that you work with now or the people you meet in connection with your work. How well does each of the following words describe these people? In the blank beside each word below, put

__ Y if it describes the people your work with

__ N if it does NOT describe them

__ ? if you cannot decide

-----------------------------

PEOPLE ON YOUR PRESENT JOB

__ Stimulating
__ Boring
__ Slow
__ Ambitious
__ Stupid
__ Responsible
__ Fast
__ Intelligent
__ Easy to make enemies
__ Talk too much
__ Smart
__ Lazy
__ Unpleasant
__ No privacy
__ Active
__ Narrow interests
__ Loyal
__ Hard to meet
Think of the pay you get now. How well does each of the following words describe your present pay? In the blank beside each word, put

__ Y if it describes your pay

__ X if it does NOT describe it

__ ? if you cannot decide

. . . . . . . . . . . . . . . . .

PRESENT PAY

___ Income adequate for normal expenses

___ Satisfactory profit sharing

___ Barely live on income

___ Bad

___ Income provides luxuries

___ Insecure

___ Less than I deserve

___ Highly paid

___ Underpaid

Now please turn to the next page . . . .
Think of the opportunities for promotion that you have now. How well does each of the following words describe these? In the blank beside each word put

___ for "Yes" if it describes your opportunities for promotion

___ for "No" if it does NOT describe them

___ if you cannot decide

. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

OPPORTUNITIES FOR PROMOTION

___ Good opportunities for promotion

___ Opportunity somewhat limited

___ Promotion on ability

___ Dead-end job

___ Good chance for promotion

___ Unfair promotion policy

___ Infrequent promotions

___ Regular promotions

___ Fairly good chance for promotion

Go on to the next page . . . . .
FACULTY DATA SHEET

Please circle number of your answer for each question.

Your gender.

1 MALE
2 FEMALE

Your present age.

1 UNDER 40
2 40 AND OVER

Your highest educational degree.

1 Ph.D.
2 Ed.D
3 MASTERS
4 BACHELORS

Your college affiliation.

1 COLLEGE OF ARTS AND SCIENCES
2 COLLEGE OF BUS. ADMINS.
3 COLLEGE OF EDUCATION
4 SCHOOL OF COMMUNITY SERVICE
5 SCHOOL OF HOME ECONOMICS
6 SCHOOL OF LIBRARY AND INFOR.
7 SCHOOL OF MUSIC
8 BASIC HEALTH SCIENCES

Your faculty rank.

1 PROFESSOR
2 ASSOCIATE PROFESSOR
3 ASSISTANT PROFESSOR

Your faculty status.

1 TENURED
2 NONTENURED

Please go on to the next page . . .
How many years of experience do you have in higher education?

1 1-5 YEARS
2 6-10 YEARS
3 11-15 YEARS
4 16-20 YEARS
5 20 OR MORE YEARS

What per cent of your time do you spend in

1 TEACHING
2 RESEARCH
3 ADMINISTRATION
APPENDIX B

LETTER OF CONFIRMATION FOR PERMISSION
TO USE INSTRUMENT
September 27, 1983

Dr. Patricia C. Smith
Department of Psychology
Bowling Green University
Bowling Green, Ohio

Dear Dr. Smith:

This letter comes in reference to the telephone call I had with you on September 7, 1983 (10:40 am, central time). I enjoyed our brief conversation on the subject of my dissertation studies and appreciate your kind words of encouragement.

This letter also is to confirm that I have your permission to use the Job Descriptive Index, which appears as part of my doctoral dissertation. I do appreciate your allowing me to use this instrument, and I hope that my study will be beneficial to the North Texas State University.

Sincerely,

Alireza S. Hashemi
Doctoral Candidate
College of Education
North Texas State University

Alireza S. Hashemi
P.O. Box 6796 N.T. Station
Denton, Texas 76203
(817) 387-6960
APPENDIX C

LETTER OF PERMISSION TO CONDUCT THE STUDY