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JOB SATISFACTION AMONG ECOLOGICAL MANAGEMENT WORKERS[1]

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ABSTRACT This paper explores levels and correlates of job satisfaction for a series of occupations concerned with ecological management in Virginia. To enhance job satisfaction, a careful balance must be maintained between organizational requirements and individual needs. Fortunately, organizational factors over which the manager can exert considerable control (specially, dimensions of bureaucratization) are more consistently related to job satisfaction than are individual factors (extent of job training, evaluation of job training, education, and job tenure).

Introduction

In recent years, there has been growing public concern regarding development and utilization of our natural resources in a way that preserves not only their economic but also their recreational and esthetic value. In order to achieve a successful integration of the diverse and sometimes conflicting goals related to our natural resources, it is important to attract and retain well-qualified individuals to be responsible for environmental stewardship.

The concept of job satisfaction has attracted enduring attention in the sociological literature. It is relevant both to the effectiveness with which individuals perform their duties and to the ability of organizations to retain workers.

Over the past decade, a series of studies has focused on various aspects of ecologically oriented occupations in the Commonwealth of Virginia (Bryant et al., 1976; Paulson et al., 1977; Shoemaker and Bryant, 1976; Snizek and Bullard, 1983; Snizek et al., 1974; Snizek et al., 1975; Snizek et al., 1976). This paper expands upon this earlier work by analyzing relationships between job satisfaction and organizational and individual characteristics, specifically in the context of environmental management. The organizational characteristics that will be analyzed include several dimensions of bureaucratization: division of labor, hierarchy of authority, prescribed procedures governing work, impersonality, and emphasis on technical competence.

The individual characteristics that will be examined are educational attainment, number of years the individual has been in his current occupation, extensiveness of the training that the individual received for his current position, and the individual's evaluation of the adequacy of the training he received for his current position.

Job Satisfaction

Job satisfaction is a key theoretical concept that has long guided research in sociology, psychology, and management science. Analysis of job satisfaction has extended across a wide spectrum of occupations: factory workers (Gibson and Klein, 1970; Schwab and Wallace, 1974; Walker and Guest, 1952; Wild and Dawson, 1972), managers (Dunnette et al., 1967; Porter and Lawler, 1964), scientists, engineers, accountants, secretaries, sales clerks, and police officers (Dunnette, et al., 1967; Herzberg et al., 1959; Talarico and Swanson, 1982) have all, at one time or another, been the focus of studies of job satisfaction.

Organizational correlates of job satisfaction

Weber's (1947) seminal work first systematically delineated the dimensions of bureaucracy. Since Weber's time, the term bureaucracy has not always been used with precision; sometimes the implicit assumption is made that any organization is bureaucratic, or that bureaucratic refers to one characteristic, rather than several. Friedrich (1949), Gouldner (1950), Udy (1959), and others have emphasized the notion that bureaucracy is a form of social organization with characteristics that vary along several continua or dimensions. This notion has been made most explicit by Hall (1968:38):

> What is commonly approached as a totality (bureaucracy) is not such an integrated whole in reality. The configurational nature of the degree to which the dimensions are present suggests that organizations are indeed composed of the commonly ascribed dimensions, but these dimensions are not necessarily all present to the same degree in actual organizations.

Some researchers have found an inverse relationship between the overall degree of bureaucratization of an organization and the level of job satisfaction among employees of the organization (Kornhauser, 1965; Sorenson and Sorenson, 1974). However, the multidimensionality of the concept of bureaucracy suggests the desirability and necessity of probing beyond such overall associations. To collapse a multidimensional concept into a single dimension may blur linkages which would otherwise appear more clearly. Therefore, we explore the relationships between job satisfaction and individual dimensions of bureaucratization using the following hypotheses.

Hypothesis 1: <u>Job satisfaction is negatively related to</u> <u>the extent to which an extensive division of labor, a</u> <u>well-defined hierarchy of authority, a detailed system of</u> <u>procedures, or impersonal interpersonal relations are</u> <u>perceived to characterize a given organization.</u>

An extensive division of labor, a well-defined hierarchy of authority, and a detailed system of procedures are all intended to make the activity of the bureaucracy more predictable, and therefore more efficient. A necessary result of these organizational characteristics, however, is that the individual employee is constrained in terms of the flexibility with which he or she can enact the specific organizational role. While bureaucratic constraints may be perceived by some individuals as freeing them by clarifying their behavioral options, the weight of theoretical argument and empirical evidence suggests that such constraints on behavior tend to reduce the individual's job satisfaction.

These arguments are consistent with 1) Blauner's (1964) classic study, as well as a more recent study (Ivancevich and Donnelly, 1975) of the relationship between division of labor and alienation; 2) Hage and Aiken (1970), Aiken and Hage (1966), Meltzer and Salter (1962), and March and Simon (1958), which show job satisfaction to be negatively related to the hierarchy of authority; and 3) research by Hage and Aiken (1970), Miller (1967), Aiken and Hage (1966), and Argyris (1964), which show greater levels of job satisfaction in organizations with loosely defined work procedures that permit role incumbents greater autonomy in their jobs. In this connection, it is interesting to note that Snizek and Bullard (1983), using longitudinal data, have shown that perceived change in bureaucracy is related to changes in job satisfaction.

Impersonality of interpersonal relations is a concomitant of other features of bureaucracy. Our argument that impersonality is related to job satisfaction is consistent with the research by Blauner (1964) and Miller (1970).

The overall thrust of each of these dimensions of bureaucratization is in a direction opposite to that of job enrichment, which "...seeks to improve both efficiency and human satisfaction by means of building into people's jobs, quite specifically, greater scope for personal achievement and recognition, more challenging and responsible work, and more opportunity for individual advancement and growth" (Paul et al., 1969). Thus, the job enrichment literature is consistent with our hypotheses regarding these three aspects of bureaucratization.

Hypothesis 2: <u>Job satisfaction is positively related to</u> <u>the extent to which decisions about hiring and promotion are</u> <u>perceived to be based on technical competence.</u>

As has been observed by others, technical competence has a unique quality, operating as a somewhat distinct dimension of bureaucratization. Specifically, Hall (1968) notes that the technical competence dimension is negatively related to several other dimensions of bureaucracy. Following Udy's (1959) distinction between "bureaucratic" and "rational" elements of organizational structure, Hall suggests that each dimension other than technical competence actually

reflects the "bureaucratic" aspect of organization, while technical competence reflects the "rational" aspect of organization. This consideration suggests that a distinction must be made between technical competence and other dimensions of bureaucratization.

From a subjective point of view, we can argue that division of labor, hierarchy of authority, and so forth are organizational characteristics that contribute primarily to the achievement of organizational goals. Reliance on evaluation of technical competence in arriving at decisions pertaining to hiring and promotion, on the other hand, not only contributes to the achievement of organizational goals but also contributes to a sorting out of individuals, rewarding individuals on the basis of their individual merit. The latter especially leads to our hypothesis of a positive relationship between job satisfaction and the technical competence dimension of bureaucratization.

Individual correlates of job satisfaction

The following hypotheses relate job satisfaction to individual characteristics.

Hypothesis 3: Educational attainment is negatively related to job satisfaction.

In a cross-section of the population, it would be **reasonable to have the opposite expectation.** As Vollmer and Kinney (1955) argue, it is reasonable to assume that persons with higher educational attainment have higher expectations in terms of income, working conditions, and so forth. There also tends to be a positive relationship between educational attainment and objective work conditions, including income. In the current context, however, we are examining job satisfaction after a very substantial control for occupation has been introduced. Although there are certainly variations in the hierarchical position among respondents in the same occupation, these data essentially examine the job satisfaction of individuals who have roughly the same occupation but varying levels of education. In this situation, we hypothesize that those with more education are likely to be less satisfied with their job.

Hypothesis 4: Number of years in the job is positively related to job satisfaction.

There are several reasons to expect job tenure to be related to job satisfaction. First, job-related skills may be acquired or improved with experience on the job. A person who does a better job may be more satisfied with his job. Second, promotions that may come with seniority may increase the rewards of the job and enhance job satisfaction. Third, individuals who are satisfied with their jobs may be more likely to remain in those jobs, whereas those who are less satisfied may leave. Several researchers have found a positive relationship between these two factors (Hulin and Smith, 1965; Wild and Dawson, 1972) while some have reported findings that contradict this hypothesis (Gibson and Klein, 1970).

Hypothesis 5A: Persons who received more job training have higher job satisfaction.

Hypothesis 5B: Individuals who believe they should have

received more job training have lower job satisfaction.
Persons who are better trained for their job, it is argued, will do a better job, and consequently derive greater satisfaction from the performance of their duties. Similarly, individuals who feel that they have been inadequately trained for a position are apt to perceive that they are not performing their duties as effectively as they could. A likely result of this perception is low job satisfaction.

Organizational contexts

This paper tests the above hypotheses using data from five ecologically oriented occupations: fisheries biologists, game wardens, marine agents, forest rangers, and park rangers. The context and concerns of each of these occupational groups are described below.

Fisheries biologists are professionals found in a variety of governmental agencies. Their principal duties revolve around the administration of fishery activities, management and manipulation of fish populations, or teaching and research in fishery-related areas. In addition to their contribution to commercial fishing, fisheries biologists also contribute to sport fishing (Bryant et al., 1976). As scientifically trained professionals, fisheries biologists are often primarily concerned with research and the technical management of water-related resources, especially fisheries resources.

Marine agents studied in this paper are officers in the law enforcement division of the Virginia Marine Resources Commission. The commission is charged with enforcement of state regulations pertaining to water pollution or water usage in salt or brackish waters within Vi°ginia. More specifically, the duties of the law enforcement division include issuing licenses, patrolling waters condemned because of pollution, monitoring the oyster bedding process, and co-enforcing with Virginia game wardens provisions of small boating regulations. Marine agents thus have the dual role of law enforcement and conservation.

Game wardens examined in this study are employed by the Game and Fish Commission of Virginia. The game warden's responsibilities involve the preservation and productive management of wildlife resources. As noted above, game wardens cooperate with marine agents for certain enforcement responsibilities. Hunting and fishing are multi-billion dollar recreational industries attracting millions of sportsmen. Game wardens must police the activities not only of these sportsmen, but in some cases they must also deal with commercial or even professional violators of game laws. The activities of game wardens are often solitary and sometimes dangerous. In spite of dedication under difficult circumstances, game wardens often fail to command the respect of the general public. As one game warden commented, "To the public, a game warden is a son-of-a-bitch if he just wears a uniform. If he writes (them) a ticket, he's a dirty son-of-a-bitch" (Bryant et al., 1976:5).

Park and forest rangers involved in this study were employed at both the state and federal level. At both

levels, differences exist in the principal organizational
mission of park rangers, as compared with forest rangers.
Park rangers are primarily concerned with preservation,
conservation, recreation, and education functions. That is,
their main responsibility is to assist the public in the
enjoyment and understanding of natural resources and to
preserve these resources for future generations. Forest
rangers, on the other hand, are organizationally committed
to utilizing natural resources for economic production. The
USDA Forest Service traditionally recognizes five primary
resources or services which accrue from the National Forest
System. These include timber, water, forage, wildlife, and
recreation. The guiding organizational philosophy is termed
the "multiple use-sustained yield" doctrine. Thus, the
Forest Service seeks to maximize the availability and use of
forest resources. The Division of Forestry, located within
the Department of Conservation and Economic Development in
Virginia, embraces a similar philosophy.

These five occupational groups thus are broadly
concerned with a range of environmental issues pertaining
especially to the forest and water resources in rural areas.
Their specific organizational mandates vary, but,
collectively, they are concerned with conservation,
preservation, and enforcement. Such functions are
particularly important where natural resources and
recreational opportunities are considered to be major
components of the state's economy, as they are in Virginia.

Methods

The paper relies on a job satisfaction scale originally
developed by Brayfield and Rothe (1951). In the years since
the scale was introduced into the literature, it has been
widely used in research. For example, Jamal (1981) found
that nurses and industrial workers on fixed shifts have
higher job satisfaction than those on rotating shift
schedules, and Narayanan and Nath (1982) found that the
introduction of "flexitime" (flexible working hours) into
one unit of a large, U.S.-based multinational corporation
had no effect on job satisfaction. In a series of studies
of industrial workers in South Africa, Orpen (1976, 1978a,
1978b, 1982a, 1982b) found that "westernized" workers had
higher job satisfaction and productivity than "tribal"
factory workers, and that job enlargement led to significant
increases in job satisfaction for westernized black workers
but had no such effect on those who were not westernized.

The Brayfield-Rothe Index of Job Satisfaction has 18
items with standard five-point Likert response categories.
Ten of the items are phrased so that agreement indicates job
satisfaction, while the other eight items are phrased so
that disagreement indicates job satisfaction. The latter
eight items are recoded so that for all 18 items a higher
score indicates higher job satisfaction. A scale is formed
by calculating the mean score for all 18 items. Examples of
satisfaction items in which agreement indicates job
satisfaction include "My job is like a hobby to me" or "Most
days I am enthusiastic about my work." Examples of items in
which disagreement indicates job satisfaction include, "Most

of the time I have to force myself to go to work" or "I am disappointed that I ever took this job." For the sample of ecological management workers utilized in this paper, the reliability of the Index of Job Satisfaction is .8713 (Cornbach's alpha; see Cornbach, 1967).

Five specific dimensions of bureaucratization are examined here, each of which is taken from Hall's (1968) bureaucracy index.[2] These dimensions are 1) the extent to which a division of labor based upon functional specialization exists within the organization, 2) the extent to which there exists a well-defined hierarchy of authority, 3) the extent to which a system of procedures exists for dealing with work situations, 4) the extent of impersonality of interpersonal relations, and 5) the extent to which promotion and selection for employment are based upon technical competence.

Only a subset of Hall's items are utilized in the present study. Specifically, each dimension is measured with three items (see Appendix), with reliabilities as follows: division of labor, .5445; hierarchy of authority, .5206; procedures, .5494; impersonality, .3847; technical competence, .6461. The reliability of the overall index of bureaucratization is .4117.

Job training was operationalized by asking respondents to rate the extent of training they received in each of seven areas relevant to their job.[3] Subjective evaluation of job training was operationalized by asking each respondent to indicate whether he felt he should have received more training in any of the seven areas. An index was constructed based on the percentage of the areas in which the respondent felt he should have received more training.

Forty-eight fisheries biologists were selected from employee lists provided by numerous public and private agencies located in Virginia. These 48 respondents represent all of the fisheries biologists identified in Virginia at the time of the study (1976-77). The data analyzed in this paper were gathered by means of structured interviews.

Data from 85 game wardens were collected in 1974-75 by participant observation, structured interviews, and mail-back questionnaires. The 85 wardens studies were randomly selected from a population of 127 throughout the state.

[2] The bureaucracy scale was not administered to the game wardens; thus, this group is omitted from this part of the analysis.

[3] **The seven areas included 1) how** to fill out forms and do paperwork, 2) how to handle oneself when faced with a dangerous situation, 3) how to safely handle firearms and other weapons, 4) how to patrol new or unfamiliar geographic areas, 5) how to plan and carry out conservation measures, 6) how to maintain and service agency equipment, and 7) how to conduct oneself in court. Each respondent was asked to indicate whether the amount of training he received in each area was "none," "little," or "great." These questions were not asked of fisheries biologists; thus, this group is omitted from this part of the analysis.

Fuller and Shoemaker

Fifty-one marine agents represent the total population of such officials in Virginia at the time of the study, July-August 1975. Data were collected from structured interview schedules and participant observations of the agents at their jobs.

In the summer of 1975, 37 park rangers and 52 forest rangers were studied. The numbers of both types represent a random sample of nearly 300 rangers working in the western part of Virginia at the time of the study. Data were collected from in-depth interviews and mail-back questionnaires.

Results

Occupational differences in job satisfaction

Before examining individual and organizational correlates of job satisfaction, we consider aggregate differences in job satisfaction among the five occupational groups.

According to the Brayfield-Roth Index, the groups reporting the highest level of job satisfaction are marine agents, forest rangers, and park rangers. All three of these groups have mean job satisfaction scores of around 4.0 on a 5.0 scale. Fisheries biologists and game wardens both report mean job satisfaction scores of 3.0. Although average in an absolute sense, these scores are clearly lower than those for marine agents and rangers. These differences are significant at the .001 level of significance ($F = 183.9$).

Not only are there significant differences in the level of job satisfaction by occupational group, these differences account for a large proportion of the variance in job satisfaction scores for these five occupational groups. In fact, occupational group explains 73 percent of the variance in job satisfaction scores for the 273 respondents. Furthermore, the scores are fairly tightly clustered within each occupational group. The standard deviation of job satisfaction scores is less than .31 for fisheries biologists, game wardens, marine agents, and park rangers and is only .44 for forest rangers. These standard deviations are fairly small for a five-point scale.

The relatively low job satisfaction of game wardens might be attributed to the generally low esteem with which they are held by the broader community. The low job satisfaction of fisheries biologists is more difficult to understand. Although we have no specific data with which to resolve the question, we would speculate that low job satisfaction of fisheries biologists has to do with unrealized aspirations to pursue different careers. The fisheries biologists in the study were employed by governmental agencies. Perhaps a substantial proportion of them would have preferred the different sorts of opportunities available in private industry or academia but, for one reason or another, they were unable to pursue such careers.

Organizational factors

As seen in Table 1, the hypotheses are largely confirmed with respect to three dimensions of bureaucratization: division of labor, hierarchy of authority, and impersonality of interpersonal relations. For impersonality of interpersonal relations, the correlation coefficient of each of the four groups is negative, and two of these coefficients are significant at the traditional .05 level. For division of labor, all four correlation coefficients again are in the predicted negative direction and one of these coefficients reaches the traditional .05 significance level. With hierarchy of authority, all four correlation coefficients are negative, and one is significant at the .05 level.

For the fourth dimension of bureaucratization, procedural system, a quite inconsistent pattern emerges. The correlation coefficient is negative among employees of two of the occupational groups and positive for the other two groups. Three of the coefficients are of modest magnitude, and only one of the coefficients is statistically significant (-.26, for forest rangers). Clearly, it is best to avoid generalizing too broadly from these inconsistent results pertaining to the perceived procedural system of the organization.

Overall, the data provide fairly strong support for the hypothesized negative relationship between job satisfaction and three dimensions of bureaucratization: division of labor, hierarchy of authority, and impersonality of interpersonal relations. Four of the twelve correlation coefficients are statistically significant, and all of the relationships are in the hypothesized direction.

The results also largely support the hypothesized relationship between technical competence and job satisfaction (Table 1). For three of the four occupational groups, job satisfaction is positively correlated with technical competence, and two of the correlation coefficients attain the .05 significance level.

The wisdom of separating the individual dimensions, rather than attempting to combine them into a single dimension, is underscored by the results already presented. Three dimensions of bureaucratization are negatively related to job satisfaction, one is positively related, and one is not consistently associated with job satisfaction. Nevertheless, for the reader's information, Table 1 includes the correlation coefficients indicating the relationship between an overall index of bureaucratization and job satisfaction. Three of the correlations are negative, but only one of the correlation coefficients is significant (in the negative direction).

Individual factors

Correlational analyses pertaining to each hypothesis are presented in Table 2. The results of additional analyses employing analysis of variance (using categories for the correlates) are referred to but are not presented because of space limitations.

Table 1. Correlations of job satisfaction with organizational variables, by occupational group

Dimension of bureaucratization	Fisheries biologists (n=48)	Marine agents (n=51)	Forest rangers (n=52)	Park rangers (n=37)
Division of labor	-.24 (.06)	-.14 (ns)	-.54 (.01)	-.22 (.11)
Hierarchy of authority	-.17 (ns)	-.14 (ns)	-.41 (.01)	-.21 (.11)
Procedures	-.12 (ns)	.08 (ns)	-.26 (.04)	.12 (ns)
Impersonality	-.17 (ns)	-.15 (ns)	-.39 (.01)	-.30 (.04)
Technical competence	-.02 (ns)	.32 (.02)	.21 (.07)	.38 (.02)
Overall index of Bureaucratization	-.16 (ns)	-.02 (ns)	-.54 (.01)	.10 (ns)

Note: Number in parenthesis indicates significance level; "ns" means nonsignificant.

Fuller and Shoemaker

Mean job satisfaction correlations with individual variables, by occupational group

	Fisheries biologists (N = 48)	Game wardens (N = 85)	Marine agents (N = 51)	Forest Rangers (N = 52)	Park Rangers (N = 37)
Mean job satisfaction	3.0	3.0	3.9	3.9	4.2
Correlation with					
Education	-.15 (ns)	.03 (ns)	.09 (ns)	-.10 (ns)	.14 (ns)
Job tenure	-.14 (ns)	.15 (.10)	-.05 (ns)	-.13 (ns)	.13 (ns)
Job training	—	-.14 (.12)	.30 (.04)	.1 (.10)	.37 (.01)
Evaluation of job training	—	.21 (.04)	-.29 (.04)	-.27 (03)	-.18 (ns)

Note: Number in parenthesis indicates significance level; "ns" means nonsignificant.

Fuller and Shoemaker

Contrary to our hypothesis, there is essentially no relationship between educational attainment and job satisfaction within occupational groups (Table 2). Most fisheries biologists have at least a college degree (78 percent). This restriction in range perhaps accounts for the lack of a relationship. Park and forest rangers have a greater dispersion in terms of educational attainment, but there is very little variation in mean job satisfaction for rangers who graduated from high school, regardless of how much further they continued their education.[4] The bulk of game wardens in the sample either terminated their education with high school graduation or had some college training but did not graduate from college.[5] There is virtually no difference in job satisfaction of these two groups (i.e., high school graduates and those with some college) and very little variation in mean job satisfaction when other educational groups are included. Marine agents are fairly evenly distributed across educational categories, but there is little difference in mean job satisfaction across these educational categories for marine agents. Thus, within occupational group, education is essentially unrelated to job satisfaction.

There is also essentially no relationship between job tenure and job satisfaction within occupational groups (Table 2). While these occupational groups differ in terms of the mean number of years on the job,[6] within each occupational group the variation in mean job satisfaction across four categories of job tenure is extremely small.[7] For fisheries biologists, the range in mean job satisfaction is from 2.9 to 3.1; for park rangers, the range is 4.1 to 4.3; for forest rangers, the range is 3.4 to 4.0;[8] for game wardens, the mean is 3.0 for each of four job tenure categories; for marine agents, the range is from 3.9 to 4.2. Thus, job tenure seems largely unrelated to job satisfaction.

For marine agents and for park rangers, job training is positively and significantly related to job satisfaction (Table 2). For forest rangers, the relationship appears weakly positive, but attains only borderline significance. For game wardens, there is a nonsignificant negative relationship between job training and job satisfaction. For all groups, moreover, there are only small differences in mean job satisfaction across four categories of job training. It would be unwise, therefore, to exaggerate the

[4] Only two park rangers and two forest rangers had less than a high school degree.

[5] Of the 80 wardens reporting educational level, 66 graduated from high school but not from college.

[6] Fisheries biologists and forest and park rangers in this sample tend to have somewhat fewer years on the job (about 10 years) than do game wardens and marine agents (about 15 years).

[7] The categories are 4 years or less, 5-10 years, 11-20 years, more than 20 years. Because of space limitations, the data are only summarized.

[8] For three job tenure categories with over 90 percent of the cases, the mean is 4.0.

importance of job training as a correlate of job
satisfaction.
   The data tend to support the hypothesized relationship
between job satisfaction and evaluation of job training
(Table 2). Except for game wardens, job satisfaction and
evaluation of training are negatively correlated, as
hypothesized. In other words, if the respondent felt he
should have received more training in several areas, he
reported lower job satisfaction. Among marine agents and
forest rangers, the negative correlation is statistically
significant. Among park rangers, the correlation is
negative, but nonsignificant. Only for game wardens is the
correlation significantly positive. Although it would be
unwise to unduly emphasize the strength or uniformity of the
observed relationship, the overall pattern of results lends
credence to the hypothesis. An interesting question
remaining for future research is whether there are
predictable circumstances under which a reversal will be
observed, such as is observed here for game wardens.

Summary and conclusions

   We have explored job satisfaction for five ecologically
oriented occupations. Several organizational and individual
correlates of job satisfaction were analyzed, including five
dimensions of bureaucratization and educational attainment,
job tenure, and job training and evaluation of the adequacy
of job training.
   The data from this study indicate that there are clear
differences in the level of job satisfaction among
practitioners of the five occupational groups, with forest
and park rangers and marine agents reporting significantly
higher job satisfaction than fisheries biologists or game
wardens.
   Among the dimensions of bureaucratization, impersonality
of interpersonal relations, division of labor, and hierarchy
of authority appear to be negatively related to job
satisfaction. The degree to which technical competence is a
key criterion for hiring and promotion is positively related
to job satisfaction. Although organizational
characteristics were more consistently related to job
satisfaction, individual characteristics were important in
certain instances. Those who received more training in
occupational procedures tended to have a higher level of job
satisfaction, whereas those who felt that they needed more
training than they received tended to have lower levels of
job satisfaction; however, there were exceptions to both of
these trends. Neither the number of years that the
individual had worked in his occupation nor the level of his
educational attainment was related to job satisfaction.
   These findings suggest a number of conclusions that are
potentially important for managers of organizations that
have responsibilities for environmental stewardship. While
many modern organizations are necessarily bureaucratic, a
delicate balance must be maintained between organizational
requirements and individual needs. If undue emphasis is
placed on the hierarchical nature of the organization, or if
an exaggerated division of labor is permitted to develop, or

Fuller and Shoemaker

if an atmosphere of impersonality permeates the organization, job satisfaction will suffer. On the other hand, if technical competence of individuals is perceived as the central criterion for important personnel decisions, job satisfaction will be enhanced. Also, it is important for organizations to take care to provide thorough training for their employees. Even if managers feel that adequate training has been provided, it is important that ecological professionals themselves believe they have the training needed to carry out their responsibilities. Finally, job satisfaction is not substantially affected by either the educational level of the employees or the number of years they have worked in the field. From a managerial standpoint, it is indeed fortunate that, at least among the factors examined in this study, organizational factors over which the manager can exert considerable control are more consistently related to job satisfaction than are individual factors.

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Appendix

The following items were used to measure the five
dimensions of bureaucratization.

1. Division of labor.
    a) One thing people like around here is the variety
       of work they get to do.
    b) There is something new and different to do almost
       every day.
    c) Most jobs in this organization involve a variety
       of different kinds of activities.
2. Hierarchy of authority.
    a) There can be little action until a supervisor
       approves a decision.
    b) A person who likes to make his/her own decisions
       would become discouraged here.
    c) I feel that I can act as my own boss in most
       matters.
3. Procedures.
    a) Standard procedures are to be followed in almost
       all situations.
    b) The organization stresses following the
       established procedures.
    c) We are to follow strict operating procedures at
       all times.
4. Impersonality.
    a) The organization is always sponsoring employee
       get-togethers.

b) A person gets the chance to develop good friends here.

c) A very friendly atmosphere is evident to everyone who works here.

5. Technical competence.

a) Many people seem to be hired simply because they are attractive in appearance.

b) People here are given raises according to how well they are liked rather than how well they do their job.

c) There is little chance for a promotion unless you are "in" with the boss.