

1980

# Job satisfaction assessment of residence halls food service personnel at three selected state universities

Thomas Edmund Walsh  
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PERSONNEL AT THREE SELECTED STATE UNIVERSITIES

*Iowa State University*

PH.D.

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Job satisfaction assessment of residence halls food service  
personnel at three selected state universities

by

Thomas Edmund Walsh

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DOCTOR OF PHILOSOPHY

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Iowa State University  
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## INTRODUCTION

Research in the subject area of job satisfaction and attitudes has been and is presently being conducted in various academic disciplines with considerable emphasis noted in psychology, business and sociology. Earlier research, especially prior to 1960, emphasized personnel satisfaction in private industry. While private industry continues to receive its share of attention, studies related to job satisfaction of employees in government service and education are being increasingly conducted and reported. This attention to the public sector can be explained, at least in part, by the impact of legislation enabling public employees and persons employed by educational institutions to participate in collective bargaining activities.

For colleges and universities, the greatest amount of research in the area of job satisfaction seems to relate to faculty as opposed to non-faculty staff. Although not necessarily surprising, it is interesting considering that for many colleges and universities the majority of the staffs are nonfaculty.

Whether employees of higher education institutions share similar job attitudes and satisfaction levels as comparable employees in private industry is uncertain. Some food service employees who have worked both in private industry and at an institution of higher education have suggested that the university employment provides greater economic stability and other nonwage advantages. The atmosphere associated with collegiality, if it exists, may also make a difference.

For many administrators responsible for reasonably large staffs, the personnel function is usually one of the most important of all administrative responsibilities. Such is the case for the food service directors at Iowa's three public institutions of higher education which are Iowa State University, the University of Iowa, and the University of Northern Iowa. For example, the staff at Iowa State University includes 20 full-time professional management personnel, 135 full-time blue collar employees, and approximately 600 part-time student workers. The blue collar staff has been organized as part of a statewide public employees' collective bargaining unit since July, 1977. Because of Iowa's retention of the "right-to-work" provisions of the 1947 Labor Management Relations Act, many of these blue collar employees are not members of the bargaining agent, American Federation of State, County, and Municipal Employees, AFL-CIO.

Because of the importance and demands of the personnel function, understanding the attitudes and the satisfaction/dissatisfaction feelings of the various food service staff members toward their respective jobs seems essential. Odiorne (1977) states that greater attention to employee concerns is one of the ten major areas that will require management attention during the decade of the 1980s. In his text, Likert (1967) suggests that the art of management must employ verifiable information derived from quantitative data and goes on to say that more important than "how things are" is "how people think things are."

According to Dunham and Smith (1979), the assumption of the 1930s and 1940s that the satisfied worker is a productive worker is not well-

supported by the research of the 1950s and 1960s. The research did consistently support the relationship between job satisfaction and certain withdrawal behaviors.

Further, Dunham and Smith report that two developments during the 1970s expanded interest in organizational surveys. First, new research on the relationship of satisfaction to performance suggested that under certain conditions the happy worker may well be the productive worker. Second, economic criteria were used to demonstrate the fiscal importance of job satisfaction to profit-making organizations. Therefore, the level of worker satisfaction, which has an important impact on profits and organizational effectiveness, reflects the state of organizational health.

Dunham and Smith state that as we move into the 1980s, many organizations, large and small, are conducting organizational surveys, and many more are seriously considering the technique. The general purpose of the survey is to obtain a better understanding of employee reactions and preferences. Such knowledge should help optimize organizational effectiveness and employee satisfaction. Survey results can be used to achieve the following: 1) reduction of employee turnover, absenteeism, and tardiness; 2) increase in employees' efforts toward organizational effectiveness; 3) analysis of known problems; 4) identification of potential problems; and 5) evaluation of current policies and procedures.

Following a discussion of various survey approaches, Dunham and Smith conclude that whatever the approach or combination of approaches, one of the valuable functions of the survey process is to describe the overall feelings of a group rather than the select or atypical opinions

of its most outspoken members. In most organizations, the survey program provides an important service for the manager who often overreacts to or makes spurious generalizations based on isolated opinions.

The purpose of this study was to assess the satisfaction levels of the blue collar food service staffs of Iowa's three public universities. The survey results may be used to achieve some of the benefits mentioned by Dunham and Smith.

As suggested earlier, little research is available concerning job attitudes or job satisfaction measurements of nonfaculty university employees or for food service workers employed at other than institutions of higher education. It is expected that the data and findings from this study will be useful to persons interested in these employee classifications.

After a careful study of various instruments available to measure job satisfaction, the survey utilized the long form of the Minnesota Satisfaction (MSQ), Revised 1977. As stated by Weiss et al. (1967) in the Manual for the Minnesota Satisfaction Questionnaire, the instrument measures satisfaction with several different aspects of the work environment; takes a relatively short time to administer (15 to 20 minutes); is easy to read (fifth-grade reading level); meets the accepted standards for reliability; and shows evidence of validity. Greater explanation of the use of the MSQ is given in the Method of Procedure section of this paper.

For the purpose of this study, satisfaction was measured in terms of extrinsic satisfaction, intrinsic satisfaction, and general or overall

satisfaction. The Method of Procedure lists the various scales of the MSQ used in each of the satisfaction measures.

This study was designed to attain the following objectives:

1. To determine differences in levels of job satisfaction of blue collar food service personnel based upon differences in the following characteristics.:
  - a. University employer or location
  - b. Age
  - c. Years of education
  - d. Job classification by job level
  - e. Job classification by job function
  - f. Tenure in present job
  - g. Tenure in a food service occupation
  - h. Tenure at the university where employed
  - i. Union membership
  - j. Sex
2. To determine differences in the level of job satisfaction among blue collar food service workers as expressed by the workers compared to the level of job satisfaction among blue collar food service workers as perceived by the supervisors of those workers.

The following hypotheses have been made with regard to the research:

1. There is no significant difference in the level of job satisfaction among food service workers based on differences in employment location.
2. There is no significant difference in the level of job

satisfaction among food service workers based on differences in age.

3. There is no significant difference in the level of job satisfaction among food service workers based on differences in years of education.
4. There is no significant difference in the level of job satisfaction among food service workers based on differences in job classification by job level.
5. There is no significant difference in the level of job satisfaction among food service workers based on differences in job classification by job function.
6. There is no significant difference in the level of job satisfaction among food service workers based on differences in tenure in their present positions.
7. There is no significant difference in the level of job satisfaction among food service workers based on differences in tenure in a food service occupation.
8. There is no significant difference in the level of job satisfaction among food service workers based on differences in tenure at the university where they are presently employed.
9. There is no significant difference in the level of job satisfaction among food service workers based on differences in union membership.
10. There is no significant difference in the level of job satisfaction among food service workers based on differences in sex.

11. There is no significant difference in the level of job satisfaction expressed by food service workers compared to the level of job satisfaction of food service workers as perceived by their supervisor.

#### Limitations of Study

Several limitations of this research project were considered and are listed as follows:

1. The study was limited to food service workers and consequently may not have included a sufficiently heterogeneous assortment of jobs as some researchers might suggest.
2. The various job class functions tended to be dominated by one sex. Production and service workers are predominantly women workers. Warewashing employees (kitchen helpers) were predominantly men workers, and all storekeepers were male employees.
3. Reason(s) for union memberships were not necessarily related to job satisfaction or dissatisfaction. Because union membership was by choice as provided for by the Right-to-Work provisions of the Labor Relations Act of 1947 (Taft-Hartley), many employees may have declined union membership to avoid paying dues.

#### Definitions

Definitions of terms used throughout the research are provided as follows:

1. Regent institutions refer to Iowa's three public universities



governed by the Iowa State Board of Regents. The three universities are Iowa State University, Ames; The University of Iowa, Iowa City; and the University of Northern Iowa, Cedar Falls.

2. Job satisfaction as used by this researcher includes intrinsic, extrinsic, and general satisfaction as measured by the satisfaction scales listed in the Method of Procedure and as included in the Minnesota Satisfaction Questionnaire (MSQ) program which also provides for measures of job dissatisfaction. As evidenced in the Review of Literature, some authors have interchanged the terms job satisfaction and job attitude.
3. Food service workers includes all blue collar staff at entry and above-entry levels and performing production, service, warewashing, and storekeeping functions.
4. Employment location refers to each of the three separate universities where the food service workers are employed.
5. Entry-level positions are those which require no prior experience or training; above-entry-level positions require experience in an appropriate entry-level position or equivalent level of training and/or experience.

## LITERATURE REVIEW

## Job Satisfaction, Performance, Absenteeism, and Turnover

A review of the literature failed to provide a single accepted definition of job satisfaction. Locke (1976) defined job satisfaction as a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences. Apparently no provision in the definition was made for negative emotional response or dissatisfaction. Further, Dyer and Parker (1975) in a survey of randomly selected members of the American Psychological Association reported considerable confusion or inconsistencies in the definitions of both intrinsic and extrinsic satisfaction.

Herzberg's two-factor theory as discussed by Herzberg, Mausner, and Snyderman (1959) suggested that people have two sets of needs in terms of job satisfaction. The first set or extrinsic (hygiene) factors involved the avoidance of pain; the second set or intrinsic (motivator) factors involved the pursuit of psychological growth. Extrinsic factors were not specifically related to an individual's job. These included company policies, supervision, salary, job security, and working conditions. Because they corresponded to the need to avoid pain, they were considered the primary determinants of job dissatisfaction. On the other hand, intrinsic factors such as achievement, recognition, the quality of the work, and responsibility corresponded to the need for professional growth. These were the main sources of job motivation or satisfaction and, therefore, the only set of factors capable of motivating employees

to perform.

Summarizing the preceding discussion, Herzberg (1966) stated that only intrinsic factors contributed to positive feelings about one's job while only extrinsic factors contributed to negative feelings about one's job. Intrinsic factors stemmed mainly from the nature of the work and the job content while extrinsic or environmental factors were external to the job content. Most important, only the intrinsic factors were thought to influence a worker's productivity.

In a 30-year longitudinal study of 57,000 job applicants for employment with a public utility, Jurgensen (1978) reported 10 specific job characteristics ranked in order of importance to the applicants. The most recent results indicated a gradual increase in importance of intrinsic factors and a gradual decrease in importance of extrinsic factors.

From a replicated study of five greatly differing subpopulations of industrial workers, Hinrichs (1968) stated that, at least for that total worker population, it was clear that industrial employees were able to reliably differentiate among, and express attitudes toward, a number of distinct components of their employment situation. The factor analysis resulted in nine independent attitudinal dimensions with relatively orthogonal structure. Also significant was the finding, that with replication of these results within the five subpopulations, comparable factor structures were obtained for each group.

Further, for nonmanagerial personnel, both male and female, attitudes toward the work itself appeared to be among the most important

correlates of overall job satisfaction and made a significant unique contribution to satisfaction variance. Hinrichs suggested that there was an evident need for research focusing on the components of job attitudes rather than attempting to utilize a global concept of general job satisfaction alone in trying to understand the dynamics of organizational behavior.

Andrisani (1978) reported from a study of job satisfaction that consistent shifts in preferences concerning aspects of jobs disliked most by workers were evident. There was some reason to suspect that declines in job satisfaction were linked to an increased interest in intrinsic aspects of work and a decreased interest in extrinsic aspects. There was little reason to suspect that a major change in work ethic recently (for the time period 1966-1972) occurred or that workers were concerned exclusively with either economic or noneconomic, intrinsic or extrinsic work rewards.

In his summary, Andrisani suggested that policy makers must consider numerous aspects of the quality of life that affect worker attitudes. "At a minimum, efforts designed to monitor carefully and chart the course of job dissatisfaction and other attitudes toward work appeared to be necessary." If worker attitudes and preferences for various aspects of work change more rapidly in the future than managerial efforts to meet them, inattention to job dissatisfaction and other work attitudes may prove costly. The findings suggest that even straightforward and easily administered measures of worker attitudes as those used here would be valuable additions to the public's arsenal of social statistics.

In his journal article, Landy (1978) stated that at various times, the concept of job satisfaction has been a dependent variable, an independent variable, a covariate, and a moderator variable. It has been linked to productivity, motivation, absenteeism and tardiness, accidents, mental health, physical health and general life satisfaction. Fifty years of research have attempted to document the relationship between an individual's feelings about his or her job and that individual's behavior.

There has been considerable discussion in the literature relative to the relationship between job satisfaction and job performance. Ruch and Hershauer (1974) emphasized that regarding satisfaction levels and production levels the debate concerning the height and depth of these levels should lead to more than just a debate of the height and depth of these levels. Unfortunately, much of the effort devoted to determining such levels has not been devoted to the more germane issue of "how to improve" the productivity and satisfaction levels regardless of the current levels or the direction of recent changes in the levels.

Ruch and Hershauer cited the experiences of two selected organizations illustrating the need to use measurement of such levels primarily as a catalyst to further improvement. One organization, after annual attitude surveys had continually yielded positive results, discontinued the survey for several years. After a lapse of a few years, a subsequent survey showed that attitude levels had markedly decreased. The organization decided to resume annual surveys and to use the results in a constructive way to isolate and solve problems before they are crises.

Brayfield and Crockett (1955); Herzberg, Mausner, and Snyderman (1959); and Katzell, Barrett, and Parker (1961) reported little to no relationship between job satisfaction and job performance. The conclusion by Brayfield and Crockett was based upon an extensive survey of the literature. The findings of Katzell, Barrett, and Parker were from a study of warehouse employees from 40 separate locations. The correlation studies by Herzberg, Mausner, and Snyderman showed only a tenuous relationship between satisfaction and performance; however, the studies did demonstrate uniform relationships between the workers' attitudes and absenteeism, turnover, and personal adjustment.

From job satisfaction and performance data gathered from 80 newly-hired female telephone operators after one and three months of work experience, Wanous (1974) drew tentative causal inferences that when job satisfaction was split into extrinsic and intrinsic components, the data suggested that performance caused intrinsic satisfaction and that extrinsic satisfaction caused performance.

Quinn, Staines, and McCullough (1974) generally supported the conclusions of others in terms of the lack of evidence establishing a significant relationship between satisfaction and performance but suggested that the contribution of job satisfaction to production was probably indirect and more likely to be reflected in reductions on the cost side of the corporate ledger rather than in increases on the output side. These indirect benefits are associated with reductions in turnover, absenteeism, alcohol and drug abuse, sabotage, and theft--all of which have been linked to some degree with job satisfaction.

Stating that worker productivity is related positively to job satisfaction, Glaser (1976) cited a 1973 Gallup Poll in which a representative sample of U.S. wage earners were interviewed and which provided a basis for Gallup's comments:

A key factor affecting productivity is job satisfaction. The worker who hates his job or is bored with it is not likely to be as productive as he could be. A cross-tabulation of survey findings is most revealing on this point. Among those in the survey who say they are "very satisfied" with their jobs, less than one-quarter say they could do 30% or more additional work per day. In sharp contrast, among those in the survey who say they are "very dissatisfied" with their jobs, about four in ten say they could do 30% or more work per day.

Glaser summarized his argument by saying it was fruitless to argue over the degree of discontent among workers because of the variables, such as age and expectations, which they brought to the job. The important point on which many people, managers as well as workers and union leaders, agreed was that a pragmatic effort to improve the American workplace for all concerned was a valid, worthwhile objective.

Stressing a need for additional survey research, Schwab and Cummings (1973) stated that greater use of common measures concerning the relationship between satisfaction and performance was necessary in order to sample the variety of work environments in a meaningfully comparable fashion. Researchers were urged to obtain as much information about potentially moderating variables as data sources and methodological skills permit.

Self-esteem, goal setting, and feedback have been mentioned as having impact on the satisfaction-productivity question. In a study of meat-processing workers subdivided on the basis of two measures of self-esteem (high and low) and on the basis of supervisory performance ratings

correlated with Job Description Index measures of satisfaction, Inkson (1978) reported that self-esteem exercised a significant moderating effect on correlation between performance and intrinsic satisfaction but not between performance and extrinsic satisfaction.

Inkson based his hypothesis on the "consistency" theory of work motivation by Korman, 1971, stating that the worker varies his or her performance to be congruent with a positive or negative self-evaluation. A high self-esteem worker attempts to perform well in order to be congruent with that self-image and becomes dissatisfied if his or her performance remains low. A low self-esteem worker does not attempt to perform well and becomes dissatisfied if his or her performance is high, thus the performance would be incongruent with his or her self-concept.

Kim and Hammer (1976) found that goal setting plus extrinsic feedback and praise was superior to goal setting alone in improving performance quality. In the area of employer satisfaction, goal setting alone enhanced satisfaction as much as did formal feedback. Self-feedback alone did little to enhance product quality or satisfaction.

Behavioral science research has been assessing a broad spectrum of factors associated with job attitudes. Hinrichs (1974) stated that reviews of much of this research usually concluded that, with one exception, the relationship between morale and performance was complex, and simple generalizations were impossible.

Hinrichs' exception was the organization's ability to maintain its workforce. Study after study has shown that, given a relatively open job market or mobility potential, the extent to which employees withdraw from



their jobs--quit or just don't come to work--was related to the degree of satisfaction they derive from their work. When a worker is satisfied with his or her job, rarely did he or she engage in activities detrimental to his or her company. When dissatisfied, he or she has reacted by becoming passive, complaining, seeking relief with the help of a third party or union, or committing sabotage. If possible, he or she has more often withdrawn from a dissatisfying situation manifested by absenteeism and attrition.

In a study reported by Andrisani (1978), the relationship between job dissatisfaction and turnover was unmistakable and suggested that highly dissatisfied workers were from 14 to 42 percentage points more likely than comparable highly satisfied workers to subsequently change employers. Furthermore, the evidence suggested that job dissatisfaction imposed considerable costs on workers in terms of increased unemployment, decreased labor force participation, and below-average growth in both annual earnings and occupational attainment.

Based on a review of 104 empirical studies, Steers and Rhodes (1978) concluded that attendance is dependent on attendance motivation and the ability to come to work. Attendance motivation was largely influenced by satisfaction with the job situation as well as with internal and external pressures to attend.

Waters and Roach (1979) reported that in a study of female clerical workers job satisfaction was significantly related to turnover during the first year of employment but not during the second. These results were reported as consistent with results from Porter, Crampon, and Smith

(1976) for managerial employees.

A study of job satisfaction and labor turnover among female factory workers by Wild and Hill (1970) showed a significant relationship between overall job dissatisfaction and voluntary labor turnover. Also, the study showed that the dissatisfied workers who voluntarily left attached such great importance to the need for personally satisfying work.

#### Job Satisfaction and Worker Characteristics

Using as criteria salary relative to age and time in organization, job line by age and tenure categories, and a motivation questionnaire asking "how important" several work facets were, Friedlander (1966) found marked differences between blue collar working groups as well as between high versus low performers. For blue collar workers, no motivational differences were found between high and low performers. The relationships were moderated by age and tenure. In early work years, the intrinsic aspects of work were important to all members, but with the passage of time, a shift to extrinsic aspects was noted. With blue collar workers, there was a general decline in motivation with age. The decline was more strongly marked among low level performers as contrasted with higher level performers.

Wild and Hill (1970), Quinn, Staines, and McCullough (1974), and Andrisani (1978) agreed that younger workers were less satisfied than older workers. Andrisani suggested that younger workers were less satisfied because of insufficient intrinsic rewards and the vast differences in occupations and years of work experience between younger and older

workers. Interestingly, Winters (1973) conducted a dissertation study investigating the relationship between job satisfaction and leisure satisfaction and concluded that most older workers appeared to be less satisfied with their leisure activities than young workers at a time in their lives when such activities should take on additional meaning and may indicate a need for greater emphasis on retirement counseling.

Among workers without a college degree, Wild and Hill found little relationship between educational level and job satisfaction. Low levels of satisfaction were registered by workers with some college education but with no degree.

In his study of library staff satisfaction as a function of occupational level, Prybil (1973) stated that the observed differences were not statistically significant. Accordingly, the work quality of satisfied library personnel was no better than for dissatisfied personnel.

Cummings (1974) reported that in a survey of white and blue collar employees of a large chemical company, work values do change as one moves up in an organizational hierarchy. For 21 of 22 employee groups, the hygienic (extrinsic) factors were reported as more important than the motivators (intrinsic factors) to individuals at or near the bottom of the hierarchy. The motivators were more important to individuals in higher levels of the hierarchy.

Both Wild and Hill (1970) and Cleveland (1973) claimed a significant positive relationship between tenure of employment and job satisfaction. Wild and Hill found that current employees with less than two years of service and terminated workers who had had less than seven

months of service tended to be dissatisfied in their jobs. In a study investigating job satisfaction and morale among school teachers, Cleveland provided the following conclusions:

1. A teacher's level of morale was related to the teacher's level of job satisfaction; that is, teachers with high intrinsic, extrinsic, and general job satisfaction were also high in morale.
2. Total years of experience in the present teaching position contributed to higher levels of satisfaction and morale.
3. Total years of experience in the teaching occupation contributed to higher levels of satisfaction and morale.

The literature revealed little information concerning the relationship between job satisfaction and the sex of workers. In a study of school principals, Lee (1972) concluded that there was no differences in job satisfaction based on sex. On the other hand, Andrisani (1978) reported that women tended to be more satisfied with their jobs than were their male counterparts.

#### Job Satisfaction and Unionization

The relationship between unionization and job satisfaction has received some attention in the literature. In a study linking unionization, productivity, and job satisfaction, Katzell et al. (1975) investigated during the early 1960s an unusual situation in which a company had 72 decentralized warehouses doing essentially the same work under similar policies, except that 40 were unionized and 32 were not. The average number of workers per warehouse was 35. The unionized warehouses tended

to be somewhat less productive and profitable, but were not significantly different in errors of work or in personnel turnover. The employees of the unionized plants also had lower average job satisfaction; however, unionization tended to be confounded with several other situational variables including larger warehouses, larger communities, higher pay, and more male employees. Katzell et al. concluded that the relationship between unionization and performance in this company were not pronounced. Further, the inference from this and other studies was that the presence or absence of a union in and of itself appeared not to play a major part in the overall satisfaction of workers.

Borjas (1979) reported that unionization had a strong negative effect on job satisfaction. Although this effect may have been due to the fact that unpleasant jobs lead to union creation, accounting for this simultaneity did not affect the results that unions have a direct effect on job satisfaction. Moreover, it was found that the union effect on job satisfaction was highly dependent on job tenure. In particular, union members expressed more dissatisfaction at higher levels of tenure. It was therefore the older workers who reported, as a result of unionization, low levels of job satisfaction. The increased dissatisfaction of union workers with tenure was attributed to the politicization of the unionized labor force and the relative fall in gains from being unionized as tenure rises. In particular, the empirical evidence suggested that unionization had a strong negative effect on quit probabilities at low levels of tenure, but that the effect diminished absolutely as tenure increased.

In their text, Dunham and Smith (1979) stated that job satisfaction has had an impact on two major aspects of union activity. One was the tendency to form or join a union, and the other was the tendency to take action within the union, such as filing grievances or striking. Survey data have been used to attend to critical issues that may influence union activity. This does not imply that surveys are antiunion devices. Indeed, surveys and unions have the same purpose: Concern for worker needs and feelings. In fact, some union organizations have often utilized surveys among their own employees and members to identify the issues that are most important to workers.

From a study of 87,740 salaried clerical, sales, and technical employees, Hammer and Smith (1978) reported that attitudes were useful predictors of future unionization activity. The most significant predictors of future unionization activity were items dealing with the supervision received.

Smith and Hopkins (1979) reported that the recent expansion of unionism in the public sector was partially the result of more permissive legislation. Surprisingly, little was known about the attitudes of such employees toward unions and collective bargaining and even less about the factors that shaped those attitudes. Most public union research has focused on issues such as the appropriateness of collective bargaining in the public sector, impact on wages and working hours, and the relationship between union and government representatives. Relatively little has been learned about employee attitudes toward unions and toward their jobs.

## A Final Note

In summarizing their text on organizational surveys, Dunham and Smith (1979) offered some interesting observations. One was that most organizations focused only on one or two of the functions for which surveys were designed.

Surveys should be used to provide management with information (feedback) about the organization that is not readily available through other means. This kind of data is valuable as an auditing tool, as a planning aid, and as a device for assessing organizational change. Surveys also help to predict or explain critical organizational events. They can act as a catalyst to stimulate communication and can provide a "safe" channel for upward communication. Organizational surveys can be effective training devices for managers; they offer the possibility of developing important skills and attaining valuable insights about the level of job satisfaction among employees. They can be used to evaluate the performance of the organization and to determine how well it meets employee needs. Finally, organizational surveys can provide the basis for the financial evaluation of employee attitudes.

Dunham and Smith also reported that most organizations have not considered using the survey technique until a serious problem occurred. A good systematic survey program often detected problems before they erupted.

Finally, Dunham and Smith stated that survey programs have helped to establish good management-worker relations to improve organizational effectiveness. When used appropriately, a survey program has shown workers that they were valued by the organization.

Executives and managers must be honest with employees about the intent of the survey. They must be responsive to the results and be willing to communicate findings and reactions to employees. Failure to do so is likely to jeopardize the utility of future surveys.

## METHOD OF PROCEDURE

The Minnesota Satisfaction Questionnaire (MSQ), 1977 copyright (Appendix A), was used in the survey of the three residence halls food service staffs at Iowa's three state-supported universities. Food service managers, supervisors, and permanent blue collar workers were included in the survey. Of the 286 respondents, 141 were employed at Iowa State University, 95 were employed at the University of Iowa, and 50 were employed at the University of Northern Iowa. Fewer than five percent of those employees eligible for the survey were excluded for reasons due to work absences, incomplete responses on the questionnaire, and personal preference not to participate.

The survey was administered at each of the institutions by the researcher during the first three weeks of January, 1980. With the exception of 18 employees at the University of Iowa and six employees at Iowa State University, all respondents completed the questionnaire in group settings of 20-50 persons during scheduled work hours on days when the usual food service demands were less because classes were not yet in session following the New Year's holiday break. The 18 University of Iowa and six Iowa State University employees were subsequently scheduled in small groups at times least disruptive to their respective food service operations.

The MSQ consists of 100 short statements to which each employee was asked to express his or her level of satisfaction or dissatisfaction when the statement was related to that aspect of the employee's job. The



employee was asked to rate each statement on a scale of 1 to 5 as follows:

| <u>Response choice</u> | <u>Scoring weight</u> |
|------------------------|-----------------------|
| Very Dissatisfied      | 1                     |
| Dissatisfied           | 2                     |
| Neither                | 3                     |
| Satisfied              | 4                     |
| Very Satisfied         | 5                     |

The demographic data sheet of the MSQ was revised (Appendix B) to the extent necessary to obtain additional employee information including food service job class, length of university employment, and union membership. The question of union membership seemed interesting because of Iowa's retention of the Right-to-Work provision of the Taft-Hartley Act enabling employees to choose union membership without the threat of job loss. Another revision in the data sheet was the deletion of the employee's name to help assure anonymity of the individual.

The respondents were instructed to answer the questions as rapidly as possible, however, no time limit was established for completion of the questionnaire. Most completed the questionnaire in 20 to 25 minutes. A few finished within 15 minutes, and a few required more than 30 minutes. Because of language or reading difficulties, four persons required more than 45 minutes and asked many questions concerning the meaning of the items.

The 40 food service management and supervisory staff were asked to respond to each statement as they perceived their employees would respond. The purpose was to ascertain if the employees' expressed level of satisfaction about the various aspects of their jobs differed significantly

from the level of satisfaction as perceived by the management and supervisory personnel.

The MSQ was used to measure intrinsic job satisfaction, extrinsic job satisfaction, and general satisfaction. General satisfaction was a total score of both the intrinsic and extrinsic scales plus the two scales: Relationship With Coworkers and Working Conditions. Intrinsic job satisfaction was the measure of 12 satisfaction scales and extrinsic job satisfaction the measure of six satisfaction scales as follows:

| <u>Intrinsic Scales</u> | <u>Extrinsic Scales</u>        |
|-------------------------|--------------------------------|
| Ability Utilization     | Advancement                    |
| Achievement             | Company Policies and Practices |
| Activity                | Compensation                   |
| Authority               | Recognition                    |
| Creativity              | Supervision-human relations    |
| Independence            | Supervision-technical          |
| Moral Values            |                                |
| Responsibility          |                                |
| Security                |                                |
| Social Service          |                                |
| Social Status           |                                |
| Variety                 |                                |

Each of the above-named 20 satisfaction scales was scored on the basis of responses to five questionnaire items. The identity of the five items representing each satisfaction scale is as follows:

| <u>Scale</u>                      | <u>Items</u> |    |    |    |     |
|-----------------------------------|--------------|----|----|----|-----|
| Ability utilization               | 7            | 27 | 47 | 67 | 87  |
| Achievement                       | 19           | 39 | 59 | 79 | 99  |
| Activity                          | 20           | 40 | 60 | 80 | 100 |
| Advancement                       | 14           | 34 | 54 | 74 | 94  |
| Authority                         | 6            | 26 | 46 | 66 | 86  |
| Company policies and<br>practices | 9            | 29 | 49 | 69 | 89  |
| Compensation                      | 12           | 32 | 52 | 72 | 92  |
| Co-workers                        | 16           | 36 | 56 | 76 | 96  |
| Creativity                        | 2            | 22 | 42 | 62 | 82  |

| <u>Scale</u> (Continued)      | <u>Items</u> |    |    |    |    |
|-------------------------------|--------------|----|----|----|----|
| Independence                  | 4            | 24 | 44 | 64 | 84 |
| Moral values                  | 3            | 23 | 43 | 63 | 83 |
| Recognition                   | 18           | 38 | 58 | 78 | 98 |
| Responsibility                | 17           | 37 | 57 | 77 | 97 |
| Security                      | 11           | 31 | 51 | 71 | 91 |
| Social service                | 1            | 21 | 41 | 61 | 81 |
| Social status                 | 8            | 28 | 48 | 68 | 88 |
| Supervision - human relations | 10           | 30 | 50 | 70 | 90 |
| Supervision - technical       | 15           | 35 | 55 | 75 | 95 |
| Variety                       | 5            | 25 | 45 | 65 | 85 |
| Working conditions            | 13           | 33 | 53 | 73 | 93 |

Employees recorded their responses using the General Purpose - National Computer Service (NCS) - Answer Sheet. Demographic information was coded on the NCS Answer Sheet by the researcher. The Iowa State University Computation Center through the Student Affairs Research Office scored the answer sheets. All subsequent statistical data were also provided by the Iowa State University Computation Center in collaboration with Dr. Roy Hickman, resource statistician for this dissertation project.

## FINDINGS

Selected descriptive characteristics of the 246 survey respondents are presented in Table 1. Ten characteristics are used to describe the population and divides them into appropriate classes. The numerical and percentage distributions of the respondents within the respective classes are given. Each of the characteristics is used as statistical variables in the research.

Table 1. Characteristics of respondents of Iowa's three public regent universities (N = 246)

|                      | Number | Percent |
|----------------------|--------|---------|
| <b>Employer</b>      |        |         |
| Location 1           | 121    | 49.2    |
| Location 2           | 80     | 32.5    |
| Location 3           | 45     | 18.3    |
| <b>Age</b>           |        |         |
| 16 to 26             | 30     | 12.2    |
| 26 to 36             | 37     | 15.0    |
| 36 to 46             | 33     | 13.4    |
| 46 to 56             | 58     | 23.6    |
| 56 and over          | 88     | 35.8    |
| <b>Education</b>     |        |         |
| Less than 12 years   | 82     | 33.3    |
| High school graduate | 113    | 45.9    |
| Some college         | 29     | 11.8    |
| College graduate     | 22     | 8.9     |
| <b>Job level</b>     |        |         |
| Entry level          | 193    | 78.5    |
| Above entry          | 53     | 21.5    |

Table 1 (Continued)

|                                     | Number | Percent |
|-------------------------------------|--------|---------|
| <b>Job function</b>                 |        |         |
| Food production                     | 138    | 56.1    |
| Food service                        | 53     | 21.5    |
| Warewashing                         | 46     | 18.7    |
| Storekeeping                        | 9      | 3.7     |
| <b>Tenure in present position</b>   |        |         |
| Less than one year                  | 56     | 22.8    |
| 1 to 3 years                        | 54     | 22.0    |
| 3 to 6 years                        | 39     | 15.8    |
| 6 to 10 years                       | 28     | 11.4    |
| 10 years and over                   | 69     | 28.0    |
| <b>Tenure in present occupation</b> |        |         |
| Less than one year                  | 17     | 6.9     |
| 1 to 3 years                        | 22     | 8.9     |
| 3 to 6 years                        | 34     | 13.8    |
| 6 to 10 years                       | 48     | 19.5    |
| 10 years and over                   | 125    | 50.8    |
| <b>Tenure at university</b>         |        |         |
| Less than one year                  | 30     | 12.2    |
| 1 to 3 years                        | 47     | 19.1    |
| 3 to 6 years                        | 42     | 17.1    |
| 6 to 10 years                       | 32     | 13.0    |
| 10 years and over                   | 95     | 38.6    |
| <b>Union membership</b>             |        |         |
| Yes                                 | 86     | 35.0    |
| No                                  | 160    | 65.0    |
| <b>Sex</b>                          |        |         |
| Male                                | 54     | 22.0    |
| Female                              | 192    | 78.0    |

Tables 2 through 11 report the extrinsic, intrinsic, and general satisfaction mean scores for the classes of each characteristic. F-ratios resulting from a single analysis of variance calculated for each of the three satisfaction measures, classified by each characteristic, are also presented. Significant F-ratios are denoted with a single asterisk (\*) for the 0.05 level and a double asterisk (\*\*) for the 0.01 level.

Table 2 reports the distribution and mean scores of the respondents based on the characteristic of employment location. Location 1 represents Iowa State University, Location 2 represents the University of Iowa, and Location 3 represents the University of Northern Iowa. The differences in mean scores using the F-ratio are significant for intrinsic satisfaction at the 0.05 level but are not significant for either extrinsic or general satisfaction. The relatively higher intrinsic satisfaction mean score of 237.9 for workers at the University of Northern Iowa appears to account for the F-test results.

Table 2. Satisfaction mean scores of employees classified by university location and the significance of the differences in mean scores using the F-test

| Employer   | Number | Mean scores |           |         |
|------------|--------|-------------|-----------|---------|
|            |        | Extrinsic   | Intrinsic | General |
| Location 1 | 121    | 104.7       | 222.7     | 363.6   |
| Location 2 | 80     | 100.1       | 229.0     | 366.8   |
| Location 3 | 45     | 100.8       | 237.9     | 376.9   |
| Total      | 246    | 102.5       | 225.5     | 367.0   |
| F-value    |        | 1.28        | 3.63*     | 0.97    |

Hypothesis 1 which states that there is no significant difference in the level of job satisfaction among food service workers based on differences in employment location is rejected for intrinsic satisfaction. The data fail to reject the hypothesis when applied to extrinsic or general satisfaction.

The numerical distribution and mean scores of the respondents based on the age characteristic are reported in Table 3. The mean score differences are significant at the 0.01 level for all three satisfaction measures. Employees below the age of 36 years are consistently less satisfied than are employees of 36 years and above. The younger workers are especially less satisfied with the intrinsic aspects of their jobs.

Table 3. Satisfaction mean scores of employees classified by age and the significance of the differences in mean scores using the F-test

| Age          | Number | Mean scores |           |         |
|--------------|--------|-------------|-----------|---------|
|              |        | Extrinsic   | Intrinsic | General |
| Less than 26 | 30     | 94.7        | 206.0     | 336.8   |
| 26 to 35.9   | 37     | 92.7        | 209.7     | 336.4   |
| 36 to 45.9   | 33     | 103.3       | 233.5     | 374.3   |
| 46 to 55.9   | 58     | 106.4       | 236.9     | 381.1   |
| 56 and older | 88     | 106.3       | 233.9     | 378.3   |
| Total        | 246    | 102.5       | 227.5     | 367.0   |
| F-value      |        | 4.37**      | 9.09**    | 8.13**  |

Hypothesis 2 which provides that there is no significant difference in the level of job satisfaction among food service workers based on differences in age is rejected for each of the three satisfaction measures with intrinsic and general satisfaction showing the greatest F-values.

Data revealing that levels of satisfaction decline as the level of education increases are shown in Table 4. The mean score differences are significant at the 0.01 level for each of the three satisfaction measures. It should be noted that the satisfaction levels of college graduates are considerably lower than for workers with less than the college degree.

Table 4. Satisfaction mean scores of employees classified by education level and the significance of the differences in mean scores using the F-test

| Education            | Number | Mean scores |           |         |
|----------------------|--------|-------------|-----------|---------|
|                      |        | Extrinsic   | Intrinsic | General |
| Less than 12 years   | 82     | 105.1       | 232.8     | 375.7   |
| High school graduate | 113    | 104.3       | 231.6     | 373.1   |
| Some college         | 29     | 103.1       | 223.9     | 364.9   |
| College graduate     | 22     | 82.7        | 191.7     | 306.3   |
| Total                | 246    | 102.5       | 227.5     | 367.0   |
| F-value              |        | 7.55**      | 11.13**   | 11.61** |



The statement of Hypothesis 3 that there is no significant difference in the level of job satisfaction among food service workers based on years of education is rejected. F-ratios are shown to be especially high for intrinsic and general satisfaction.

Table 5 reports the numerical distribution and mean scores of the respondents based on the job level characteristic. The above-entry workers perform many of the same tasks as their entry-level counterparts plus have some leadership and other responsibilities necessary for the success of their respective work units. The mean score differences are significant at the 0.01 level for each satisfaction measure. The F-values are higher than for any other characteristic for all satisfaction measures with intrinsic and general satisfaction showing very high values.

Table 5. Satisfaction mean scores of employees classified by job level and the significance of the differences in mean scores using the F-test

| Job level         | Number | Mean scores |           |         |
|-------------------|--------|-------------|-----------|---------|
|                   |        | Extrinsic   | Intrinsic | General |
| Entry level       | 193    | 100.4       | 222.4     | 359.4   |
| Above entry level | 53     | 110.1       | 246.1     | 395.0   |
| Total             | 246    | 102.5       | 227.5     | 367.0   |
| F-value           |        | 9.00**      | 22.95**   | 19.06** |

Hypothesis 4 which states that there is no significant difference in the level of job satisfaction among food service workers based on differences in job classification by job level is rejected for each satisfaction measure.

The 246 survey respondents are also classified into the job functions of food production, food service, warewashing, and storekeeping. Table 6 shows the numerical distribution and mean scores of the respondents based on job function. The mean score differences are significant at the 0.01 level for both extrinsic and intrinsic satisfaction and significant at the 0.05 level for general satisfaction. An appropriate reminder at this point is that satisfaction with coworkers and working conditions is included in the measure of general satisfaction but in neither extrinsic or intrinsic satisfaction.

Table 6. Satisfaction mean scores of employees classified by job function and the significance of the differences in mean scores using the F-test

| Job function | Number | Mean scores |           |         |
|--------------|--------|-------------|-----------|---------|
|              |        | Extrinsic   | Intrinsic | General |
| Production   | 138    | 105.2       | 230.6     | 372.5   |
| Service      | 53     | 103.4       | 231.8     | 373.4   |
| Warewashing  | 46     | 96.9        | 212.6     | 346.2   |
| Storekeeping | 9      | 83.6        | 231.1     | 353.0   |
| Total        | 246    | 102.5       | 227.5     | 367.0   |
| F-value      |        | 4.40**      | 3.96**    | 3.23*   |

Mean scores for the 138 production workers and the 53 service workers are similar for each satisfaction measure. The 46 warewashing workers show lower levels of satisfaction on each satisfaction measure than production or service personnel with especially low satisfaction levels related to the intrinsic and general satisfaction aspects of their jobs. The nine storekeepers indicate a satisfaction level similar to production and service workers regarding intrinsic aspects but also show the lowest extrinsic satisfaction level.

Hypothesis 5 which says that there is no significant difference in the level of job satisfaction among food service workers based on differences in job classification by job function is rejected at the 0.01 level for extrinsic and intrinsic satisfaction and at the 0.05 level for general satisfaction.

Table 7 reports the numerical distribution and mean scores for respondents based on tenure in their present positions. The differences in mean scores are small for all three satisfaction measures.

Table 7. Satisfaction mean scores of employees classified by tenure in present position and the significance of the differences in mean scores using the F-test

| Position tenure    | Number | Mean scores |           |         |
|--------------------|--------|-------------|-----------|---------|
|                    |        | Extrinsic   | Intrinsic | General |
| Less than one year | 56     | 104.7       | 224.2     | 366.5   |
| 1 to 2.9 years     | 54     | 102.3       | 224.6     | 364.1   |
| 3 to 5.9 years     | 39     | 98.2        | 227.5     | 361.6   |
| 6 to 9.9 years     | 28     | 104.1       | 228.8     | 369.0   |
| 10 years and above | 69     | 102.6       | 231.9     | 372.1   |
| Total              | 246    | 102.5       | 227.5     | 367.0   |
| F-value            |        | 0.58        | 0.55      | 0.29    |

Based on F-test results, Hypothesis 6 which states that there is no significant difference in the level of job satisfaction among food service workers based on differences in tenure in their present positions is not rejected for any of the three satisfaction measures.

The respondents' tenure in food service occupations is revealed in Table 8. The numerical distribution with only 17 workers reporting less than one year and 125 workers reporting ten or more years is considerably different from the more uniform distribution for position tenure shown in Table 7.

Table 8. Satisfaction mean scores of employees classified by tenure in a food service occupation and the significance of the differences in mean scores using the F-test

| Tenure in occupation | Number | Mean scores |           |         |
|----------------------|--------|-------------|-----------|---------|
|                      |        | Extrinsic   | Intrinsic | General |
| Less than one year   | 17     | 103.6       | 222.4     | 364.1   |
| 1 to 2.9 years       | 22     | 101.1       | 216.7     | 355.9   |
| 3 to 5.9 years       | 34     | 96.4        | 216.2     | 347.6   |
| 6 to 9.9 years       | 48     | 101.8       | 221.0     | 358.6   |
| 10 years and above   | 125    | 104.4       | 235.7     | 378.0   |
| Total                | 246    | 102.5       | 227.5     | 367.0   |
| F-value              |        | 0.99        | 4.21**    | 2.95*   |

The mean score differences are significant at the 0.01 level for intrinsic satisfaction and at the 0.05 level for general satisfaction. Significant differences are not noted for extrinsic satisfaction. The 125 workers with ten years and above report the highest levels of satisfaction for all three measures with especially higher levels concerning

the intrinsic and general satisfaction aspects of their jobs.

That there is no significant difference in the level of job satisfaction among food service workers based on tenure in a food service occupation as stated in Hypothesis 7 is rejected at the 0.01 level for intrinsic satisfaction and at the 0.05 level for general satisfaction. The F-ratio results fail to reject the hypothesis for extrinsic satisfaction.

The numerical distribution and mean scores of the respondents based on tenure at their respective universities is reported in Table 9.

Table 9. Satisfaction mean scores of employees classified by tenure at their respective university location and the significance of the differences in mean scores using the F-test

| Tenure at university | Number | Mean scores |           |         |
|----------------------|--------|-------------|-----------|---------|
|                      |        | Extrinsic   | Intrinsic | General |
| Less than one year   | 30     | 105.8       | 225.6     | 371.0   |
| 1 to 2.9 years       | 47     | 102.7       | 223.0     | 362.4   |
| 3 to 5.9 years       | 42     | 97.5        | 220.8     | 353.6   |
| 6 to 9.9 years       | 32     | 101.5       | 221.7     | 358.7   |
| 10 years and above   | 95     | 103.8       | 235.3     | 376.8   |
| Total                | 246    | 102.5       | 227.5     | 367.0   |
| F-value              |        | 0.87        | 2.27      | 1.74    |

Although the workers employed ten years and above state a somewhat higher intrinsic satisfaction, none of the three satisfaction measures show significant F-ratios. Therefore, Hypothesis 8 which says that there is no significant difference in the level of job satisfaction

among food service workers based on differences in tenure at the university where they are presently employed is not rejected for any of the three satisfaction measures.

Although all of the respondents are represented by a public employees bargaining agent for collective bargaining purposes, union membership is not required in the state of Iowa which has retained the right-to-work provision of the Taft-Hartley Act. As presented in Table 10, 86 of the 246 respondents are union members.

Table 10. Satisfaction mean scores of employees classified by union membership and the significance of the differences in mean scores using the F-test

| Union membership | Number | Mean scores |           |         |
|------------------|--------|-------------|-----------|---------|
|                  |        | Extrinsic   | Intrinsic | General |
| Member           | 86     | 99.0        | 230.8     | 366.9   |
| Nonmember        | 160    | 104.3       | 225.8     | 367.2   |
| Total            | 246    | 102.5       | 227.5     | 367.0   |
| F-value          |        | 3.54        | 1.28      | 0.00    |

Union members report less satisfaction concerning extrinsic aspect but greater satisfaction with the intrinsic aspects of their jobs, however, the F-ratios are not significant for either measure. The results, therefore, fail to reject Hypothesis 9 which provides that there is no significant difference in the level of job satisfaction among food service workers based on differences in union membership.

Table 11 reveals the numerical distribution and mean scores of the

respondents based on sex. The 192 female workers report higher levels of satisfaction for each of the three satisfaction measures than male workers.

Table 11. Satisfaction mean scores of employees classified by sex and the significance of the differences in mean scores using the F-test

| Sex     | Number | Mean scores |           |         |
|---------|--------|-------------|-----------|---------|
|         |        | Extrinsic   | Intrinsic | General |
| Male    | 54     | 93.9        | 213.9     | 344.0   |
| Female  | 192    | 104.9       | 231.3     | 373.5   |
| Total   | 246    | 102.5       | 227.5     | 367.0   |
| F-value |        | 4.37**      | 9.09**    | 8.13**  |

Hypothesis 10 which states that there is no significant difference in the level of job satisfaction among food service workers based on differences in sex is rejected for each of the satisfaction measures at the 0.01 level. Intrinsic and general satisfaction F-ratios are approximately twice that for extrinsic satisfaction.

Results of the analyses of variance indicate that some employee characteristics, when considered individually, may be useful in assessing both the extrinsic and intrinsic dimensions of job satisfaction. In order to simultaneously consider the relationship of these characteristics to job satisfaction and to develop a model for estimation and explanation of such relationships, regression analysis is used. Measurement variables such as age and years of position tenure are used as originally measured, while categorical variables such as job level and sex are

fitted by using dummy (0, 1) variables. Dependent variables used are extrinsic and intrinsic satisfaction scores. For measurement variables, both linear and quadratic terms are included in the model to allow for detection of nonlinear relationships.

In the development of the regression model, two types of variables are recognized. Group I variables include those which are temporal in nature. Characteristics in Group I are age, education, tenure in position, tenure in occupation, and tenure at location. Group II include the remaining employee characteristics: job level, job function, employee location, union membership, and sex. It is hypothesized that the variables within each group might be interrelated to each other and that an explanatory model need not include all variables within each group which prove to be significant in the single classification analyses of variance. This degree of relationship or association among Group I characteristics is assessed by correlation analysis, while the association among Group II variables is measured by the use of chi-square statistics.

Development of the model proceeds as follows for each of the two job satisfaction variables. At Step 1, a sequential regression model is fitted using those variables within Group I which are significant in the single classification analyses of variance. The variable with the highest F-ratio obtained in the earlier analyses of variance enters the model initially. Succeeding variables enter the equation in the order of their F-ratios with a partial F-ratio computed to assess the effect of the last variable entering the model, conditional on those variables already in



the model. The process terminates when the partial F-ratio for a variable is not significant at the 0.05 level. Step 1 for variables in Group II proceeds in a similar manner.

At Step 2, those variables retained in the two models developed at Step 1 are fitted in a single model. Partial F-ratios are computed for each variable, conditional on the remaining values included, and any characteristic which has a nonsignificant F-ratio is dropped.

The procedure at Step 3 is to screen all first-order interactions among variables remaining in the model at the termination of Step 2. First-order interaction terms are fitted singly and partial F-ratios computed. If none or only one interaction term is found to be significant, the procedure terminates and the final model includes those characteristics.

At Step 4, if more than two interactions are found to be significant at Step 3, the variables and significant first-order interactions are fitted simultaneously. Any first-order interaction with a nonsignificant F-ratio, conditional on the other variables and interactions in the model, is dropped. Thus, the final model includes variables retained at the end of Step 2 and interactions retained at Step 3 or Step 4, whichever is applicable.

A summary of the F-values for the single analyses of variance (Tables 2-11) is included in Table 12. For extrinsic satisfaction, significant F-values at the 0.01 level are shown for the characteristics of age, years of education, job level, job function, and sex. For intrinsic satisfaction, significant F-values at the 0.01 level are shown for the

characteristics of age, years of education, job level, job function, tenure in present occupation (food service), and sex. Employment location is significant at the 0.05 level for the intrinsic satisfaction measure.

Table 12. Summary of F-values on single ANOVs (Tables 2-11) for the three satisfaction measures

| Characteristic               | ANOVA (F-values) |           |         |
|------------------------------|------------------|-----------|---------|
|                              | Extrinsic        | Intrinsic | General |
| Employment location          | 1.3              | 3.6*      | 1.0     |
| Age                          | 4.4**            | 9.1**     | 8.1**   |
| Years of education           | 7.6**            | 11.1**    | 11.6**  |
| Job level                    | 9.0**            | 23.0**    | 19.1**  |
| Job function                 | 4.4**            | 4.0**     | 3.2*    |
| Tenure in present job        | 0.6              | 0.6       | 0.3     |
| Tenure in present occupation | 1.0              | 4.2**     | 2.9*    |
| Tenure at present location   | 0.9              | 2.3       | 1.7     |
| Union membership             | 3.5              | 1.3       | 0.0     |
| Sex                          | 4.4**            | 9.1**     | 8.1**   |

For general satisfaction, significant F-ratios are reported at the 0.01 level for age, years of education, job level, and sex. Job function and tenure in the food service occupation are significant at the 0.05 level.

The characteristics of age, years of education, and tenure in the food service occupation are continuous variables with significant F-ratios for the three satisfaction measures. A correlation matrix for these three employee characteristics is shown in Table 13.

Table 13. Correlation matrix among Group I variables

|                      | Age      | Education | Tenure in occupation |
|----------------------|----------|-----------|----------------------|
| Age                  | 1.000    | -0.509**  | 0.532**              |
| Education            | -0.509** | 1.000     | -0.250**             |
| Tenure in occupation | 0.532**  | -0.250**  | 1.000                |

Tables 14, 15, and 16 report the classification of the employees according to the characteristics of sex, job level, and job function and the corresponding chi-square values which are significant to the 0.01 level for each classification. The purpose of the chi-square test is as an index of association of the variables. It is not used as a test of independence.

Table 14. Employees classified by sex and job level

| Sex    | Job level   |      |        |      |        |       |
|--------|-------------|------|--------|------|--------|-------|
|        | Above entry |      | Entry  |      | Total  |       |
|        | Number      | %    | Number | %    | Number | %     |
| Male   | 3           | 5.6  | 51     | 94.4 | 54     | 100.0 |
| Female | 50          | 26.0 | 142    | 74.0 | 192    | 100.0 |
| Total  | 53          | 21.5 | 193    | 78.5 | 246    | 100.0 |

Chi-square = 9.288\*\*

Table 15. Employees classified by job function and sex

| Function     | Sex    |       |        |      |        |       |
|--------------|--------|-------|--------|------|--------|-------|
|              | Male   |       | Female |      | Total  |       |
|              | Number | %     | Number | %    | Number | %     |
| Production   | 9      | 6.5   | 129    | 93.5 | 138    | 100.0 |
| Service      | 1      | 1.9   | 52     | 98.1 | 53     | 100.0 |
| Warewashing  | 35     | 76.1  | 11     | 23.9 | 46     | 100.0 |
| Storekeeping | 9      | 100.0 | 0      | 0.0  | 9      | 100.0 |
| Total        | 54     | 22.0  | 192    | 78.0 | 246    | 100.0 |

Chi-square = 142.316\*\*

Table 16. Employees classified by job function and job level

| Function     | Job level   |      |        |      |        |       |
|--------------|-------------|------|--------|------|--------|-------|
|              | Above entry |      | Entry  |      | Total  |       |
|              | Number      | %    | Number | %    | Number | %     |
| Production   | 45          | 32.6 | 93     | 67.4 | 138    | 100.0 |
| Service      | 4           | 7.5  | 49     | 92.5 | 53     | 100.0 |
| Warewashing  | 3           | 6.5  | 43     | 93.5 | 46     | 100.0 |
| Storekeeping | 1           | 11.1 | 8      | 88.9 | 9      | 100.0 |
| Total        | 53          | 21.5 | 193    | 78.5 | 246    | 100.0 |

Chi-square = 22.859\*\*

#### Analysis of Extrinsic Satisfaction

A sequential regression analysis of the Group I variables, years of education and age, which show significant (0.01) levels of extrinsic satisfaction in the single analyses of variance is presented in Table 17.

The linear and quadratic dimensions of both education and age are shown with only education appearing to be curvilinear. The F-values are significant at the 0.01 level for number of years of education, both linear and quadratic, and for age, linear only.

Table 17. Sequential regression analysis of significant Group I variables measuring extrinsic satisfaction

| Variable              | d.f. | Regression<br>Sum of<br>squares | Mean square |       | F-value |
|-----------------------|------|---------------------------------|-------------|-------|---------|
|                       |      |                                 | Difference  | Error |         |
| Education - linear    | 1    | 5,259.4                         | --          | 435.1 | 12.09** |
| Education - quadratic | 1    | 8,518.9                         | 3,259.5     | 423.5 | 7.70**  |
| Age - linear          | 1    | 11,413.5                        | 2,894.6     | 413.3 | 7.00**  |
| Age - quadratic       | 1    | 11,416.6                        | 3.1         | 414.9 | 0.01    |

Group II variables which measure significant (0.01) levels of extrinsic satisfaction in the single analyses of variance are presented in the sequential regression analysis in Table 18. Job function added to job level shows a significant F-value at the 0.01 level. The addition of the sex characteristic to job function and job level does not provide significant results.

A regression analysis of the five significant main effects reported in Tables 17 and 18 is offered in Table 19. Partial F-values are also shown. All variables have significant partial F-values in Model I except the job level variable. The four significant variables in Model I are fitted in Model II. Partial F-values are significant at the 0.01 level for all variables.

Table 18. Sequential regression analysis of significant Group II variables measuring extrinsic satisfaction

| Variable     | d.f. | Regression<br>Sum of<br>squares | Mean square |       | F-value |
|--------------|------|---------------------------------|-------------|-------|---------|
|              |      |                                 | Difference  | Error |         |
| Job level    | 1    | 3,964.3                         | --          | 440.4 | 9.00**  |
| Job function | 3    | 8,370.6                         | 1,468.8     | 427.6 | 3.43**  |
| Sex          | 1    | 8,859.9                         | 489.3       | 427.4 | 1.14    |

Table 19. Regression analysis of all significant main effects measuring extrinsic satisfaction fitted to two models with all Model II partial F-values significant

| Variable              | d.f. | Partial F-values |          |
|-----------------------|------|------------------|----------|
|                       |      | Model I          | Model II |
| Education - linear    | 1    | 3.59**           | 4.29**   |
| Education - quadratic | 1    | 5.29**           | 5.97**   |
| Job level             | 1    | 2.73             | --       |
| Job function          | 3    | 3.05**           | 3.32**   |
| Age                   | 1    | 3.38**           | 5.71**   |

Table 20 provides a regression analysis of the significant main effects with singly added interactions. The linear and quadratic forms of the education variable are combined. The F-values show no significant effect due to interaction between the variables.

Based on the significant Model II main effects in Table 19 and the lack of effect due to interaction as shown in Table 20, the final model including coefficient values for estimating extrinsic satisfaction of

Table 20. Regression analysis of significant main effects measuring extrinsic satisfaction with singly added interactions

| Interaction  | d.f. | Regression<br>Sum of<br>squares | Mean square |       | F-value |
|--|------|---------------------------------|-------------|-------|---------|
|  |      |                                 | Difference  | Error |         |
| Education (linear,<br>quadratic) x age             | 1    | 15,797.9                        | 189.9       | 403.5 | 0.47    |
| Education (linear,<br>quadratic) x job<br>function | 1    | 18,449.9                        | 504.9       | 397.3 | 1.27    |
| Age x job function                                 | 1    | 17,560.5                        | 713.4       | 397.7 | 1.79    |

food service employees at Iowa's three state universities is as follows:

$$\hat{Y}_i = 34.6 + 7.4E_i - 0.3E_i^2 + 21.4F_{1i} + 20.4F_{2i} + 17.9F_{3i} + 0.2A_i$$

(R-square = 0.138)

where  $\hat{Y}_i$  = estimated extrinsic satisfaction score

34.6 = satisfaction score attributed to job function of storekeeping

$E_i$  = number of years of education

$F_{1i}$  = 1 if job function is production; 0 otherwise

$F_{2i}$  = 1 if job function is service; 0 otherwise

$F_{3i}$  = 1 if job function is warewashing; 0 otherwise

$A_i$  = number of years of age

The estimated extrinsic satisfaction is based on the characteristics of education, job function, and age. The intercept of 34.6 consists of the effect of the job function dummy variable, specifically the store-keeping function. As the model shows, the effect of any other job

function is added to the effect of storekeeping. Both the linear and quadratic terms of educations are included in the model indicating a curvilinear effect. Approximately 12 years of education provides the greatest satisfaction score.

#### Analysis of Intrinsic Satisfaction

A sequential regression analysis of the Group I variables of years of education, age, and tenure in a food service occupation which show significant (0.01) levels of intrinsic satisfaction in the single analyses of variance is presented in Table 21. The linear and quadratic dimensions of each are shown. All variables show significant F-ratios at the 0.01 level except the quadratic form of tenure which is significant at the 0.05 level. The curvilinear shape of the regression line for each continuous variable is demonstrated.

Table 21. Sequential regression analysis of significant Group I variables measuring intrinsic satisfaction

| Variable              | d.f. | Regression<br>Sum of<br>squares | Mean square |        | F-value |
|-----------------------|------|---------------------------------|-------------|--------|---------|
|                       |      |                                 | Difference  | Error  |         |
| Education - linear    | 1    | 17,913.2                        | --          | 1034.9 | 17.31** |
| Education - quadratic | 1    | 29,808.1                        | 11,894.9    | 990.2  | 12.01** |
| Age - linear          | 1    | 41,400.9                        | 11,592.8    | 946.4  | 12.25** |
| Age - quadratic       | 1    | 46,888.1                        | 5,487.2     | 927.6  | 5.92**  |
| Tenure - linear       | 1    | 52,357.3                        | 5,469.2     | 908.6  | 6.02**  |
| Tenure - quadratic    | 1    | 55,585.5                        | 3,228.2     | 898.9  | 3.59*   |



Group II variables which measure significant (0.01) levels of intrinsic satisfaction in the single analyses of variance are included in the regression analysis shown in Table 22. The variable of sex added to job level shows a significant F-ratio at the 0.01 level. The addition of the job function variable to sex and job level does not provide significant results.

Table 22. Sequential regression analysis of significant Group II variables measuring intrinsic satisfaction

| Variable     | d.f. | Regression<br>Sum of<br>squares | Mean square |         | F-value |
|--------------|------|---------------------------------|-------------|---------|---------|
|              |      |                                 | Difference  | Error   |         |
| Job level    | 1    | 23,252.0                        | --          | 1,013.0 | 22.95** |
| Sex          | 1    | 30,187.9                        | 6,935.9     | 988.7   | 7.02**  |
| Job function | 3    | 34,954.6                        | 1,588.9     | 981.2   | 1.62    |

A regression analysis of the nine significant main effects reported in Tables 21 and 22 is reported in Table 23. Partial F-values are also shown. All variables show significant partial F-values in Model I except for sex. The eight significant variables in Model I are fitted in Model II. Partial F-values are significant at the 0.01 level for all variables.

Table 24 provides a regression analysis of the significant main effects with singly added interactions. Linear and quadratic forms are combined for each of the variables of education, age, and tenure. Two interactions are significant; however, the interaction of age with job level is not significant when the interaction, education with job level, is in the model.

Table 23. Regression analysis of all significant main effects measuring intrinsic satisfaction fitted to two models with all Model II partial F-values significant

| Variable              | d.f. | Partial F-values |          |
|-----------------------|------|------------------|----------|
|                       |      | Model I          | Model II |
| Education - linear    | 1    | 6.88**           | 10.06**  |
| Education - quadratic | 1    | 9.49**           | 13.37**  |
| Age - linear          | 1    | 9.96**           | 9.50**   |
| Age - quadratic       | 1    | 8.18**           | 7.49**   |
| Tenure - linear       | 1    | 2.32*            | 2.76*    |
| Tenure - quadratic    | 1    | 4.83**           | 5.17**   |
| Job level             | 1    | 8.80**           | 10.05**  |
| Sex                   | 1    | 1.96             | --       |
| Employer location     | 2    | 4.86**           | 4.83**   |

Table 24. Regression analysis of significant main effects measuring intrinsic satisfaction with singly added interactions

| Interaction                                  | d.f. | Regression<br>Sum of<br>squares | Mean square |       | F-value |
|--|------|---------------------------------|-------------|-------|---------|
|  |      |                                 | Difference  | Error |         |
| Education x age                              | 1    | 71,158.1                        | 129.7       | 848.0 | 0.15    |
| Education x tenure                           | 1    | 71,900.4                        | 872.2       | 844.8 | 1.03    |
| Education (linear,<br>quadratic) x job level | 2    | 79,902.8                        | 8,874.6     | 814.2 | 5.45**  |
| Education x location                         | 4    | 76,975.9                        | 5,947.7     | 833.9 | 1.78    |
| Age x tenure                                 | 1    | 71,218.4                        | 190.2       | 847.7 | 0.22    |
| Age (linear, quadratic)<br>x job level       | 2    | 76,355.2                        | 5,327.0     | 829.4 | 3.21**  |
| Age x location                               | 4    | 75,160.3                        | 4,132.1     | 841.7 | 1.23    |
| Tenure x job level                           | 2    | 71,676.6                        | 648.4       | 849.4 | 0.38    |
| Tenure x location                            | 4    | 71,902.1                        | 873.9       | 855.7 | 0.49    |
| Job level x location                         | 2    | 73,110.8                        | 2,082.6     | 843.3 | 1.23    |

Based on the significant Model II main effects in Table 23 and the significant interactions reported in Table 24, the final model including coefficient values for estimating intrinsic satisfaction of food service employees at Iowa's three state universities is as follows:

$$\hat{Y}_i = 106.8 + 6.65E_i - 0.15E_i^2 + 3.59A_i - 0.0357A_i^2 - 0.11T_i + 0.00027T_i^2 - 16.6J_i + 14.3L_{1i} + 14.7L_{2i} + 0.49E_iJ_i - 0.047E_i^2J_i$$

(R-square = 0.295)

where:

- $\hat{Y}_i$  = estimated intrinsic satisfaction  
 106.8 = satisfaction score attributed to entry level position and Iowa State University location  
 $E_i$  = number of years of education  
 $A_i$  = number of years of age  
 $T_i$  = number of months in present occupation  
 $J_i$  = 1 if above-entry position; 0 if entry level  
 $L_{1i}$  = 1 if location is University of Northern Iowa; 0 otherwise  
 $L_{2i}$  = 1 if location is University of Iowa; 0 otherwise

The estimated intrinsic satisfaction is based on the characteristics of education, age, tenure in the food service occupation, job level, and employer location. The intercept of 106.8 represents the effects of dummy variables job level and employer location, specifically entry-level positions and the location of Iowa State University. Above entry positions add 16.6 points to the satisfaction score. The locations of the

University of Northern Iowa and the University of Iowa add 14.3 and 14.7, respectively.

The linear and quadratic terms for education, age, and tenure are included in the model. The curve for education and tenure is upward and gradual. Age 45 provides the highest point on the age curve. The interaction of education with job level is also curvilinear with linear and quadratic terms.

#### Discussion of General Satisfaction

Of the 20 Minnesota Satisfaction Questionnaire (MSQ) scales, 18 are included in the measures of extrinsic and intrinsic satisfaction. General satisfaction is the sum of the extrinsic and intrinsic measures plus the two scales of satisfaction with coworkers and working conditions.

A final model of significant main effects was developed for general satisfaction and was similar to the model for intrinsic satisfaction in terms of main effects and the interaction of education and job level. An interpretation of the general satisfaction is best explained by an understanding of the results of the final models for extrinsic and intrinsic satisfaction. Use of the two satisfaction models gives management more precise information than use of only the general satisfaction model.

#### Employee Satisfaction versus Management Perception

The final aspect of this research project was to ascertain any differences in the job satisfaction levels as reported by the food service workers compared to the managers' perception of the workers' satisfaction.

The effect of employer location on the results was also studied.

Analyses of variance for extrinsic, intrinsic, and general satisfaction are reported in Tables 25, 26, and 27, respectively. On all measures, as shown in Table 28, employees report higher levels of satisfaction than their managers perceive. Significant F-values are reported for intrinsic satisfaction at the 0.01 level and for general satisfaction at the 0.05 level. No significant results for extrinsic satisfaction are shown. Thus, for intrinsic and general job satisfaction, Hypothesis 11 which states that there is no significant difference in the level of job satisfaction expressed by food service workers compared to the level of job satisfaction of food service workers as perceived by their supervisors is rejected. The hypothesis is not rejected for extrinsic satisfaction. In addition, the effect of either employer location or the interaction of employees with job location is not significant for all measures.

Table 25. Analysis of variance of extrinsic satisfaction mean scores as reported by employees compared to the managers' perception of the employees' job satisfaction by employer location

| Variable               | d.f. | Sum of squares | Mean square | F-value |
|------------------------|------|----------------|-------------|---------|
| Employees vs. managers | 1    | 1,273.4        | 1,273.4     | 3.02    |
| Location               | 2    | 762.7          | 381.4       | 0.90    |
| Employees x location   | 2    | 73.6           | 36.8        | 0.09    |
| Error                  | 280  | 118,259.8      | 422.4       | --      |

Table 26. Analysis of variance of intrinsic satisfaction mean scores as reported by employees compared to the managers' perception of the employees' job satisfaction by employer location

| Variable               | d.f. | Sum of squares | Mean square | F-value |
|------------------------|------|----------------|-------------|---------|
| Employees vs. managers | 1    | 7,840.1        | 7,840.1     | 7.66**  |
| Location               | 2    | 5,292.2        | 2,646.1     | 2.59    |
| Employees x location   | 2    | 693.2          | 346.6       | 0.34    |
| Error                  | 280  | 286,520.8      | 1,023.3     | --      |

Table 27. Analysis of variance of general satisfaction mean scores as reported by employees compared to the managers' perception of the employees' job satisfaction by employer location

| Variable               | d.f. | Sum of squares | Mean square | F-value |
|------------------------|------|----------------|-------------|---------|
| Employees vs. managers | 1    | 16,786.8       | 16,786.8    | 6.01*   |
| Location               | 2    | 3,612.0        | 1,806.0     | 0.65    |
| Employees x location   | 2    | 862.9          | 431.4       | 0.15    |
| Error                  | 280  | 782,031.7      | 2,793.0     | --      |

Table 28. Satisfaction mean scores of employees and of the managers' perception of employee satisfaction

| Group     | Number | Mean scores |           |         |
|-----------|--------|-------------|-----------|---------|
|           |        | Extrinsic   | Intrinsic | General |
| Employees | 246    | 102.5       | 227.5     | 367.1   |
| Managers  | 40     | 96.1        | 208.5     | 341.2   |
| Total     | 286    | 101.6       | 224.8     | 363.4   |

## DISCUSSION

The 246 food service employees participating in the research project are classified according to ten selected characteristics as shown in Table 1 of the Findings. The employees are blue collar workers at the three public universities which are governed by Iowa's State Board of Regents. Almost all of the food service personnel at the three schools participated in the survey. A few were absent from work or had incomplete responses on the questionnaire.

Because Iowa's public employees are represented by one blue collar bargaining unit, personnel policies are generally the same for all food service employees in this study. For example, there is one wage administration policy relating to job classification, salary structure, and benefits for the three universities. Transfer privileges within the same job class among universities are provided.

The food service programs are operated separately by each university with some variance in philosophy, management staffing, and food service activities. The primary purpose of each food service, however, is to provide food service for contracted students living in university residence halls.

As revealed in Table 2, Iowa State University employs the largest number of blue collar food service workers accounting for 49.2 percent of the respondents. Although the results are not significant, the Iowa State workers expressed the highest level of extrinsic satisfaction. On the other hand, intrinsic satisfaction levels were the lowest for this same

group.

The fewest number of workers are employed at the University of Northern Iowa accounting for 18.3 percent of the respondents; however, they enjoy the highest level of intrinsic satisfaction of the three location groups. The smallness of work group may be a factor contributing to greater intrinsic satisfaction.

Younger workers under 36 years of age report lower satisfaction levels for all measures (Table 3) than workers 36 years of age and above. The younger workers represent 27 percent of the population in the study. Many of the 22 college graduates are in this age group and yet occupy entry-level positions. Many also have less tenure in the food service occupations and may not be considering this a long-term career option.

As the number of years of education (Table 4) increases, the satisfaction levels for all measures generally decline. This is especially apparent on the intrinsic satisfaction scale. College graduates report the greatest dissatisfaction, possibly attributable to the greater expectations which members of this educational group have for themselves as a result of the college degree. As mentioned previously, many of the college graduates occupy entry-level positions, are younger, and have less food service tenure.

Food service workers in above-entry level positions show significantly greater levels of job satisfaction for all measures than do entry-level employees (Table 5). The job level characteristic provided a greater F-value for the intrinsic satisfaction measure than any other characteristic reported in the study.



Most above-entry level positions include qualifications of experience in the similar entry position. For example, a Cook II (head cook) requires experience as a Cook I (cook's helper) or similar position. Comparable qualifications are required for a Baker II, Food Worker III, Kitchen Helper II, Storekeeper III, and others. The increased responsibility for the success of a work area, the recognition received as a leader, and greater input into decisions may contribute to greater satisfaction results.

Job functions are groupings of positions according to the kinds of tasks performed. Food production positions include cooks, bakers, and salad preparation (food worker classes) where similar tasks are performed. Service personnel perform tasks involving cafeteria and dining room service. Warewashing workers include kitchen helper job classes and perform such tasks as dishwashing, pot and pan washing, and custodial. Storekeepers receive, store, inventory, and deliver food and other supplies and maintain storage facilities.

Production and service workers report high levels (Table 6) of satisfaction on both extrinsic and intrinsic satisfaction measures. Warewashers and storekeepers are the most dissatisfied on the intrinsic and extrinsic measures, respectively. A study of the results on the 12 scales which constitute the intrinsic measure for warewashing personnel would be interesting. Dishwashing duties are considered by many in the food service industry as low in achievement, advancement, creativity, and social status. Although possibly affected by the fact that all storekeepers in the study are men, it might be interesting to learn

reasons for the dissatisfaction on the extrinsic measure which includes the scales of advancement, company policies, compensation, recognition, and supervision.

The results of the satisfaction measures of food service personnel based on the number of years of tenure in their present positions are presented in Table 7. Significant differences in mean scores are not evident. Intrinsic satisfaction mean scores increase as position tenure increases, however, no trend is apparent for extrinsic satisfaction mean scores.

Tenure in terms of the number of years of employment in a food service occupation is reported in Table 8. Many of the workers have held other food service positions prior to their present positions. Many of those in above-entry level positions have held entry-level positions at the university as well as similar food service positions with other employers including hospitals, schools, and restaurants. Over 50 percent of the workers report ten years or more of food service experience.

On the intrinsic measure, significant mean score differences are reported with the highest satisfaction level stated by employees with ten years or more in a food service occupation. It is expected that this group of workers occupies a larger proportion of above-entry level positions, performs production or service functions, is older, and is female.

Employees with less than one year of food service experience report the next highest levels of satisfaction. The lowest satisfaction levels are reported for those workers with from three to less than six years

experience. An explanation of this U-shaped satisfaction curve would be speculative. A partial explanation might be found in a study of employees who terminate employment. A hypothesis that new workers who gradually become more dissatisfied during the first few years withdraw from the work force may be worth exploring.

Tenure at their present location (Table 9) does not show significant mean score differences. Generally, the satisfaction trend has the U-shaped configuration similar to that for tenure in a food service occupation.

The bargaining unit of which the food service workers are a part is represented by the Association of Federal, State, County, Municipal Employees (AFSCME). Only 35 percent of the food service workers belong to AFSCME.

Although satisfaction mean scores (Table 10) are not significantly different, some differences are noted. Union members indicate a higher intrinsic satisfaction level but lower extrinsic satisfaction than non-members.

Female workers constitute 78 percent of the food service work force as compared to only 22 percent male workers. Mean scores were significantly higher for female workers (Table 11) on both the extrinsic and intrinsic satisfaction measures. The female workers dominate the production and service functional groups which report higher satisfaction levels and which include a greater proportion of the above-entry positions.

The correlation matrix for the continuous variables of age, education, and tenure in present occupation (Table 13) shows a significant

positive relationship between age and tenure in a food service occupation; that is, the number of years in a food service occupation increases as the age of the employees increases. The correlation matrix also shows a significant negative relationship between age and educational level; that is, the educational level of the employees decreases as the age increases.

The cross-classification of the discrete variables of job level and sex shows significant chi-square test results (Table 14). While 26 percent of the female workers hold above-entry level positions, less than six percent of the male workers hold the higher level positions. That workers in above-entry positions enjoy significantly greater satisfaction is shown in Table 5.

Significant chi-square test results for the cross-classification of the discrete variables sex and job function are reported in Table 15. With production and service employees reporting higher levels of job satisfaction, it is interesting to note that 93.5 percent of the production workers and 98.1 percent of the service workers are female. Also, with warewashing workers reporting lower intrinsic satisfaction and storekeepers reporting lower extrinsic satisfaction, it is noted that only 23.9 percent of the warewashing and none of the storekeepers are female workers.

The cross-classification of the discrete variables job function and job level report significant chi-square test results (Table 16). The greatest frequency of above-entry positions is in the production class with 32.6 percent of those positions above-entry while only 7.5 percent of service, 6.5 percent of warewashing, and 11.1 percent of storekeeping

positions are above-entry

### Discussion of Extrinsic Satisfaction

Sequential regression analyses of significant continuous and discrete variables measuring extrinsic satisfaction are reported in Tables 17 and 18 and resulted in the selection of five significant main effects to be fitted in a regression analysis to two models for which partial F-values are computed. Model II in Table 19 shows education - linear, education - quadratic, job function, and age as the four significant main effects to be included in a final model for estimating employee extrinsic satisfaction.

Table 20 provides the results of a regression analysis to test singly added interactions of the three main effects of education, job function, and age. No significant F-values are reported.

A regression analysis of the significant main effects was made to establish corresponding coefficients for use in a final model for estimating an individual's extrinsic satisfaction. The intercept value of 34.6 is the expected extrinsic satisfaction value that any employee, including storekeepers omitted from the model, would contribute regardless of job function.

The model, as reported in the Findings section, for estimating extrinsic satisfaction for a food service worker at any of Iowa's three university resident halls food service systems is as follows:

$$\hat{Y}_i = 34.6 + 7.4E_i - 0.3E_i^2 + 21.4F_{1i} + 20.4F_{2i} + 17.9 F_{3i} + 0.2 A_i$$

where:  $\hat{Y}_i$  = estimated extrinsic satisfaction  
 34.6 = intercept  
 $E_i$  = number of years of education  
 $F_{1i}$  = 1 if employee is a production worker; 0 otherwise  
 $F_{2i}$  = 1 if employee is a service worker; 0 otherwise  
 $F_{3i}$  = 1 if employer is a warewasher; 0 otherwise  
 $A_i$  = number of years of age

As an example, the model may be utilized to estimate extrinsic satisfaction of a warewashing employee who has completed ten years of education and is 40 years of age:

$$\begin{aligned}\hat{Y}_i &= 34.6 + 7.4E_i - 0.3E_i^2 + 17.9F_{3i} + 0.2A_i \\ &= 34.6 + 7.4(10) - 0.3(10)^2 + 17.9(1) + 0.2(40) \\ &= 34.6 + 74.0 - 30.0 + 17.9 + 8.0 \\ &= 104.5\end{aligned}$$

The 104.5 estimate in the above example is slightly higher than the average extrinsic satisfaction mean score of 96.9 reported in Table 6 for all warewashers. Extrinsic satisfaction increases as age increases and as education increases to 12 years after which additional education causes a decline in extrinsic satisfaction. Use of the final model may be especially helpful as part of the personnel selection, transfer, and promotion processes. It should be remembered that small differences of estimated extrinsic satisfaction when comparing individuals should be ignored considering that the estimated standard deviation of individuals in the regression model is approximately 20.

### Discussion of Intrinsic Satisfaction

Sequential regression analyses of significant continuous and discrete variables measuring intrinsic satisfaction are reported in Tables 21 and 22 and resulted in the selection of eight significant main effects in addition to employer location to be fitted in a regression analysis to two models for which partial F-values are computed. Model II in Table 23 shows the significant main effects to be included in a final model for estimating employee intrinsic satisfaction.

Table 24 provides the results of a regression analysis to test singly added interactions of the six main effects. Significant F-values are found for education (linear, quadratic) with job level and is included in the final model. The interaction of age (linear, quadratic) with job level is not significant if education (linear, quadratic) with job level is in the model and therefore is not included in the model.

A regression analysis of the significant main effects and one interaction term was made to establish corresponding coefficients for use in a final model for estimating an individual's intrinsic satisfaction. The intercept value of 106.8 is the expected intrinsic satisfaction value that any employee, including those at Iowa State University and in entry positions, would contribute regardless of employer location and job level.

The model, as reported in the Findings section, for estimating intrinsic satisfaction for a food service worker at any of Iowa's three university residence halls food service systems is as follows:

$$\hat{Y} = 106.8 + 6.65E_i - 0.15E_i^2 + 3.59A_i - 0.0357A_i^2 - 0.11T_i + 0.00027T_i^2 - 16.6J_i + 14.3L_{1i} + 14.7L_{2i} + 0.49E_iJ_i - 0.047E_i^2J_i$$

where:  $\hat{Y}_i$  = estimated intrinsic satisfaction

106.8 = intercept

$E_i$  = number of years of education

$A_i$  = number of years of age

$T_i$  = number of months of tenure in food service

$J_i$  = 1 if above-entry position; 0 otherwise

$L_{1i}$  = 1 if location is University of Northern Iowa; 0 otherwise

$L_{2i}$  = 1 if location is University of Iowa; 0 otherwise

$E_iJ_i$  = 1 if above-entry position; 0 otherwise

As an example, the model may be utilized to estimate intrinsic satisfaction of an Iowa State University employee with 12 years of education, 50 years of age, and 15 years (180 months) of food service experience in an above-entry position:

$$\begin{aligned} \hat{Y} &= 106.8 + 6.65E_i - 0.15E_i^2 + 3.59A_i - 0.0357A_i^2 - 0.11T_i + \\ & 0.00027T_i^2 - 106.6J_i + 14.3L_{1i} + 14.7L_{2i} + 0.49E_iJ_i - \\ & 0.047E_i^2J_i \\ &= 106.8 + 6.65(12) - 0.15(12)^2 + 3.59(50) - 0.0357(50)^2 - \\ & 0.11(180) + 0.00027(180)^2 - 16.6(1) + 14.3(0) + 14.7(0) + \\ & 0.49(12)(1) - 0.047(12^2)(1) \end{aligned}$$



$$\begin{aligned}
 &= 106.8 + 79.8 - 21.6 + 179.5 - 89.3 - 19.8 + 8.8 - 16.6 + \\
 &\quad 5.9 - 6.8 \\
 &= 226.7
 \end{aligned}$$

The 226.7 estimate of intrinsic satisfaction may be used at Iowa State University to compare with other candidates for the same position with a different mix of education, age, and food service experience. A quantified rank order of the candidates considering these three characteristics would enable an optimization of the selection decision. It is recognized that other factors must also be evaluated in making the final selection. Observed small differences of estimated intrinsic satisfaction when comparing individuals should be ignored considering that the estimated standard deviation of individuals in the regression model is approximately 30.

#### Employee Satisfaction versus Management Perception

The food service managers were asked to respond on the MSQ as they believed their employees would. In other words, the responses of the managers represent their perceptions of the employees' job satisfaction.

For all three measures, the responses by the employees indicate greater satisfaction than that perceived by the food service managers with a significant difference concerning the intrinsic aspects of the job. This difference is interesting and may reflect the nature of the communication between the employee and his or her supervisor. Dissatisfactions are generally conveyed by employees more frequently and more emphatically than satisfactions. A relatively new performance appraisal system in

use at the three universities requires the employee and manager to sit down and discuss the employee's job and his or her goals for the next year. Possibly such a meeting will enable the manager to better sense the employee's satisfactions and dissatisfactions.

## RECOMMENDATIONS

Examination of the data suggests ideas for further research. Each suggestion or recommendation is based on the use of the Minnesota Satisfaction Questionnaire (MSQ) to provide a uniform interpretation of results.

One recommendation is for the conducting of a study of other major university food service programs in order to establish a larger data bank available for comparison on either a national, regional, or institutional basis. Final models for estimating extrinsic and intrinsic satisfaction would be interesting and helpful. The same or similar characteristics are suggested.

The findings of this study revealed no significant differences in satisfaction mean scores as a result of union membership. Because this finding is not consistent with the literature review, a further study of this question seems appropriate. For universities where unions are not present or in states where the right-to-work provision has been repealed, an alternative question would seem to be whether the employee would join the union if the choice were offered. The findings would show differences in job satisfaction between those who would join and those who would not.

A third recommendation is for a study of other blue collar workers at any or all of these three university locations using similar, yet appropriate, characteristics. Some common findings with the food service study may suggest a review of personnel policies, procedures, and/or

activities.

Fourth, a study is recommended to include other public, blue collar food service workers in Iowa employed at the various state institutions including mental health institutes, correctional institutions, a children's home, and a home for retired military personnel. These workers belong to the same collective bargaining unit as the university employees although there are some variance in personnel policies. They serve different clients and work in a different setting than the university staff. A study of the differences within the other public food service workers as well as a comparison with the university personnel may show interesting results.

A fifth recommendation is for a study to repeat this research in five years to update the findings considering changes in personnel policies and changes in staff. The repeat effort could be part of a longitudinal study providing a pretest-experiment-posttest research project which would scientifically measure more precisely the effects of a personnel program in terms of job satisfaction.

Another recommendation is for a study of the same group of employees utilizing additional characteristics, especially socioeconomic characteristics such as marital status, dependents, primary or secondary family income, work history, and general financial condition. A survey might also include a checklist of possible programs (e.g., employee counseling, formalized job instruction, or social programs) that would contribute to greater employee satisfaction.

A final recommendation for additional research is for a study of

intrinsic job satisfaction. Intrinsic satisfaction as used in this study consists of 12 scales. There were significant mean score differences for several of the characteristics. For example, warewashers scored quite low for the intrinsic satisfaction measure while workers in other job functions scored relatively high. In order to understand the reasons for the low scores and to suggest appropriate action that might serve to increase warewashers' job satisfaction, a study of the various components of the intrinsic satisfaction measure seems desirable. As mentioned in the literature review, Herzberg (1966) stated that only the intrinsic factors were thought to influence a worker's productivity. The need to focus on intrinsic job satisfaction is supported also by Hinrichs (1968) and Andrisani (1978).

In addition to further academic research, employer initiative to confront the concern of worker job satisfaction is recommended. For example, at any of the three Iowa universities, a food service labor-management committee providing both employee and supervisor participation would provide a means to discuss employee concerns and to sponsor informational and educational programs including the conducting of employee surveys. If all campus locations had such committees, a central coordinating committee could be established to enable the sharing of experiences and to provide leadership in joint programs, especially those related to training and development. Other possible activities for the separate committees may include employee recognition programs, employee counseling, supervisor awareness toward employee attitudes, recreation and social programs, and employee information programs (e.g., newsletter, meetings, and surveys).

## SUMMARY

The purpose of this study was to assess job satisfaction levels of residence halls food service workers at Iowa's three state-supported universities. The universities were Iowa State University, the University of Iowa, and the University of Northern Iowa.

There were 246 blue collar employees and 40 management or supervisory personnel participating in the survey. The 100-item Minnesota Satisfaction Questionnaire (MSQ) consisting of 20 satisfaction scales was used. Extrinsic satisfaction was measured by six of the 20 scales, and intrinsic satisfaction was measured by 12 scales. The scales of working conditions and satisfaction with coworkers were only used in measuring general or overall satisfaction.

The survey was completed during January, 1980. The MSQ was administered in group sessions at each campus location. While each worker was asked to answer each item according to his or her feeling about the job, each management person was asked to respond as he or she believed the employees would respond. With the exception of a few employees who were absent or who failed to complete the MSQ, the total population of employees participated in the survey.

The importance of job satisfaction was discussed in the literature review. Although there was some question as to whether the satisfied worker was the productive worker, considerable agreement was expressed that increased job satisfaction contributed to a significant reduction in problems related to absenteeism, tardiness, labor turnover, alcohol

and drug abuse, sabotage and theft. Lower satisfaction levels were a major factor in the unionization of workers.

Ten employee characteristics were included in the study. The numerical and percentage distributions and the satisfaction mean scores for each characteristic subdivision were reported. F-test results for the mean score differences were also shown.

Employer location was one characteristic. Employer location was subdivided to represent each of the three universities. Mean score differences were significant at the 0.05 level for intrinsic satisfaction only. The University of Northern Iowa with the smallest food service program reported the highest level of intrinsic satisfaction, and Iowa State University with the largest program reported the lowest level.

Another characteristic in the study was age. The literature review indicated that younger workers were less satisfied than older workers, possibly due to the lack of intrinsic rewards. The literature suggested that older workers were less satisfied with their leisure activities thereby making work a more important aspect of life. The data supported the literature for both extrinsic and intrinsic satisfaction with intrinsic showing greater mean score differences. Considering differences in satisfaction, age 36 divided younger and older workers.

The characteristic of educational level has frequently been used in the study of job satisfaction. The literature stated that blue collar workers with college degrees expressed the greatest dissatisfaction and that there was no relationship between education and job satisfaction for noncollege graduates although some lower satisfaction levels were

reported for those with college education but no degree. The data were consistent with the literature with significant mean score differences on both extrinsic and intrinsic satisfaction measures. Perusal of the scores showed the differences attributed to college graduates with no apparent differences observed between other educational levels.

The job level characteristic was also included in the research. The literature reported that work values change as people move up in the hierarchy with intrinsic factors of greater importance at the higher levels. The data supported the literature showing significant mean score differences for both extrinsic and intrinsic satisfaction measures. Workers in the above-entry positions showed especially high levels of intrinsic satisfaction.

The characteristic of job function classified employees into production, service, warewashing, and storekeeping positions unique to food service. Warewashing workers reported low levels of satisfaction on both extrinsic and intrinsic measures. Storekeepers showed high intrinsic satisfaction but the lowest extrinsic satisfaction of all groups. Warewashing and storekeeping positions included the greatest percentage of male workers and offered the fewest opportunities for advancement.

Tenure was studied in terms of position, occupation, and employer location. The data indicated that mean score differences for tenure in position and at employer location were not significant. For tenure in occupation, mean score differences were not significant for extrinsic satisfaction but were significant at the 0.01 level for intrinsic satisfaction. Workers with ten years or more in the food service occupation



reported the highest satisfaction levels. One study in the literature review indicated that workers with less than two years of experience were less satisfied.

The literature review provided little information about blue collar workers regarding the characteristic of sex. One study of school principals found that women were more satisfied with their jobs. This researcher's data reported that women were significantly more satisfied than men in their food service positions. It was observed that women held a greater proportion of production and service positions which also included more above-entry positions.

The literature offered conflicting reports on the effect of union membership on job satisfaction. One study inferred that the presence or absence of a union did not play a part in job satisfaction. Another study reported that unionization had a strong negative influence, however, an admission was made that low job satisfaction may have contributed to unionization. For public sector workers, little data in the literature were available regarding worker attitudes toward unions and toward their jobs. In this study, there was no significant difference in mean scores of union members and nonunion workers although union members tended to be less satisfied with extrinsic factors and more satisfied with intrinsic factors of their jobs.

Some relationship between these ten selected characteristics was expected. For example, it was expected that older workers would also be those with the longest tenure in the occupation or in position. Also, there was the expectation that younger workers would have more years of education and would generally occupy only entry-level positions. A

relationship between the characteristics of job function and sex seemed probable with women occupying a greater proportion of the production and service positions and men filling most warewashing and storekeeping positions.

To simultaneously consider these characteristics including their relationships with each other and to develop a model for estimation and explanation, regression analysis was used. The characteristics were grouped into those which were temporal in nature (age, education, tenure in position, tenure in occupation, and tenure at university location) and those which were not (employment location, job level, job function, union membership, and sex).

Two predictive models were developed from this study. One was to estimate extrinsic job satisfaction and the other to estimate intrinsic job satisfaction. The extrinsic job satisfaction model included the following significant variables: years of education (linear and quadratic), job function (production, service, and warewashing), and years of age. The job function of storekeeping was included in the intercept of the model.

The intrinsic job satisfaction model consisted of the following significant variables: years of education (linear and quadratic), years of age (linear and quadratic), years of tenure in the food service occupation (linear and quadratic), job level, employer location (University of Northern Iowa and University of Iowa), and the interaction terms of job level and education (linear and quadratic). The model intercept included the effects of both employer location of Iowa State

University and job level for entry-level workers.

The models were developed as management tools to serve at least two purposes. One purpose was to enable management to evaluate the estimated extrinsic and intrinsic job satisfaction levels of position candidates based on significant quantified personal and work characteristics. The second purpose was to explain extrinsic or intrinsic job satisfaction in measurable terms using significant personal and work characteristics considered simultaneously rather than individually.

Finally, the results of the study revealed that the food service workers expressed higher levels of job satisfaction on all three satisfaction measures than their supervisors and managers perceived with significant differences observed for intrinsic and general satisfaction. These findings were consistent for all three university locations.

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APPENDIX A: MINNESOTA SATISFACTION QUESTIONNAIRE



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**APPENDIX C: APPROVAL FOR USE OF HUMAN SUBJECTS IN RESEARCH**

(Please follow the accompanying instructions for completing this form.)

90

1. Title of project (please type): Job Satisfaction Assessment of Classified Residence Halls Food Service Personnel at Selected Universities

2. I agree to provide the proper surveillance of this project to insure that the rights and welfare of the human subjects are properly protected. Additions to or changes in procedures affecting the subjects after the project has been approved will be submitted to the committee for review.

Thomas E. Walsh 12-4-79 Thomas E. Walsh  
Typed Name of Principal Investigator Date Signature of Principal Investigator  
1212 Friley Hall 294-3856  
Campus Address Campus Telephone

3. Signatures of others (if any) Date Relationship to Principal Investigator

4. ATTACH an additional page(s) (A) describing your proposed research and (B) the subjects to be used, (C) indicating any risks or discomforts to the subjects, and (D) covering any topics checked below. CHECK all boxes applicable.

- Medical clearance necessary before subjects can participate
- Samples (blood, tissue, etc.) from subjects
- Administration of substances (foods, drugs, etc.) to subjects
- Physical exercise or conditioning for subjects
- Deception of subjects
- Subjects under 14 years of age and(or)  Subjects 14-17 years of age
- Subjects in institutions
- Research must be approved by another institution or agency

*Rec'd  
12-12-79*

5. ATTACH an example of the material to be used to obtain informed consent and CHECK which type will be used.

- Signed informed consent will be obtained.
- Modified informed consent will be obtained.

6. Anticipated date on which subjects will be first contacted: January 2 1980  
Anticipated date for last contact with subjects: January 9 1980

7. If Applicable: Anticipated date on which audio or visual tapes will be erased and(or) identifiers will be removed from completed survey instruments:

Month Day Year

8. Signature of Head or Chairperson [Signature] Date 12/10/79 Department or Administrative Unit Professional Studies

9. Decision of the University Committee on the Use of Human Subjects in Research:  
 Project Approved  Project not approved  No action required  
George G. Karas 1/2/80 [Signature]  
Name of Committee Chairperson Date Signature of Committee Chairperson

THOMAS E. WALSH  
December 12, 1979

### INSTRUCTIONS FOR PARTICIPANTS

Prior to the distribution of the questionnaire and answer sheet, the following information/instructions will be provided the prospective participants:

1. You are being asked to participate in a survey of food service personnel at your university. The questionnaire which you will complete requires approximately 15 to 20 minutes of your time and asks questions concerning your satisfaction about certain aspects of your job.
2. The results of the research project will be available to interested persons. Although immediate benefits are not expected, an understanding of your satisfaction toward the various aspects of your job may encourage increased consideration concerning your job needs and expectations.
3. Feel free to ask any questions concerning the survey.
4. You are free to discontinue your participation at any time.
5. Your response to the questions asked will be confidential; in fact, your identity will not be known to anyone. Neither your name nor any identifying codes are included in the survey. (See footnote below)

Footnote: A separate personal data sheet is being developed so that the printed questionnaires can be reused. The person's name will be omitted. One additional question asking whether or not a person is a member of the Association of Federal, State, County, and Municipal Employees (legal bargaining agent) will be asked.

*Approved for the Committee*  
*1/2/80*