JOB DESIGN IN CONVENTIONAL AND HIGHLY TECHNICAL HOSPITAL FOODSERVICE SYSTEMS

by

JOSEPH G. SHAFFER

B.S., Indiana University of Pennsylvania, 1969

A MASTER'S THESIS

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

Department of Dietetics, Restaurant,
and Institutional Management

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1979

Approved by:

Helene G. Vadew

Major Professor

ACKNOWLEDGMENTS

Appreciation is expressed to Dr. Allene Vaden for her untiring and inspiring efforts in the design, execution, and evaluation of this research project. Her contributions of time, effort, patience, and professional expertise were invaluable to my learning and personal growth. Special thanks are extended to Dr. Richard Vaden for contributing his comprehensive behavioral management perspective throughout this research project. Gratitude is also extended to Dr. Stephan Konz for his assistance toward the completion of this endeavor.

Dr. Donald Hoyt, Mr. Kris Arheart, and Mrs. Nedra Sylvis deserve a note of appreciation. Their technical services were instrumental to this project. Mr. Richard Jack and Mr. Jim Mauszycki along with their clients, staff, and all the employees who participated in the study are extended special recognition. Without their cooperation this study would not have happened.

Thanks to the personal support of Pamla Hoadley and William Deeds this project was completed. Their assistance will be remembered always.

Appreciation cannot be expressed adequately to my wife Cheryl. Above all others her selfless dedication and support made possible the accomplishment of my entire graduate study. Thanks also go to Jerad and Claire for understanding their daddy's inattentiveness throughout the duration of this project.

TABLE OF CONTENTS

Page

Page

LIST OF TABLES

Table | Page

Table | Page

LIST OF FIGURES

INTRODUCTION

New systems are being designed, tested, and implemented in all areas of foodservice operations. Emphasis of design has centered on economic aspects of the systems and on technological development. Specialization of labor, mechanical and electrical energy, standardization and interchangeable parts, precision from machines, mass production and mass consumption, and assembly line are suggested by Konz (1) to be the key characteristics of an industrial society. Developments of recent years in the foodservice industry demonstrate identity with these characteristics. Effectiveness of the new systems has been measured by the degree to which the systems attain their objectives within economic constraints. Deviations from the expected outcomes have been explained by human failure to adjust to the work, not the work failing to fit the human.

Since Taylor's Philadelphia coal shoveling experiments at the beginning of the twentieth century (2), the industrial community has applied the scientific management of work to every conceivable human task. Reports of worker alienation pervade the literature (3-5). Walton (6) contended alienation was rooted in worker expectations differing from what organizations are prepared to offer in work. Dysfunctional workplace behaviors are not uncommon. These behavioral outcomes depress productivity and stifle growth, in addition to the psychological and social costs of alienation.

In recent years managers and scientists have shown a growing interest in the structure and characteristics of jobs as related to productivity and worker satisfaction. Scott (7) argued that amount and

variety of stimulation serve to affect the motivation of the worker and enable him/her to maintain a high level of performance. Hulin (8) purported that nonroutine, nonrepetitive jobs are likely to serve as positive motivators of behavior for a large percentage of workers. Hackman and Lawler (9) described six dimensions of jobs. Variety, autonomy, task identity, and feedback give the worker satisfaction if they are experienced on the job. Dealing with others and friendship opportunities are the two of the six dimensions that relate to the interpersonal characteristics of a job. The way in which a job is structured may contribute to the worker's motivation. Job design has been defined as the objective characteristics of a job or work or task that contribute to productivity and intrinsic satisfaction experienced by the worker (10-13).

Hackman and Oldham (13) developed the Job Diagnostic Survey (JDS) to measure three classes of variables:

1. The objective characteristics of jobs.
2. The personal affective reactions of individuals to their jobs and to the broader work setting.
3. The readiness of individuals to respond positively to enriched jobs.

The basis of the JDS is a specific theory of how jobs affect employee motivation. The theory proposes that positive personal and work outcomes result from three critical psychological states, experienced meaningfulness of the work, responsibility for work outcomes, and knowledge of the actual results of work activities. Five core job dimensions create these three psychological states. The core job dimensions are skill variety, task identity, task significance, autonomy, and feedback. Because all

individuals have varying degrees of personal needs and values the growth need strength of an individual worker will have a moderating effect on the relationship between core job dimensions, critical psychological states, and the personal and work outcomes. The JDS provides a motivating potential score or an index for the potential of a job to promote internal work motivation on the part of job incumbents.

New foodservice technology has resulted in systems in which the production of food is separated from service, either in time or place. Cook-freeze and cook-chill systems are examples of the new technology. As foodservice technology changes, the structure and design of jobs are affected. Several studies concerned with behavioral factors affecting the foodservice industry have been reported (14-17). The purpose of this research project was to compare the characteristics and motivating potential of jobs designed for two types of hospital foodservice systems, conventional and cook-chill/cook-freeze. Literature reviewed included: systems approach to management, technology and the systems approach, foodservice as an open system, current changes in foodservice, job satisfaction, job design, job enrichment, job characteristics, job characteristics scales, and job design and foodservice operations.

REVIEW OF LITERATURE

Management: A Systems Approach

Kast and Rosenzweig (18) described organizations as social systems that are: (a) goal-oriented, people with a purpose; (b) psychosocial systems, people working in groups; (c) technological systems, people using knowledge and techniques; and (d) an integration of structured activities, people working together. A "system" defies clear definition but classically is described as a flow of inputs (material/energy/information) into a transformation element to be processed into outputs. Kast and Rosenzweig viewed the organization as an open, sociotechnical system composed of five subsystems (Fig. 1). This view considered the primary subsystems of the organization and their interactions.

Scott (19) argued that the only way to study the organization is as a system with its synthesizing, integrating nature. In analyzing organization theory, Scott presented the system as a social framework. Figure 2 shows Scott's model of the organization in relation to the goals of the organization which he defined as: (a) stability, (b) growth, and (c) interaction. The first part of this system is the individual with a personality structure that contributes to the organization. The second part is the formal organization which provides structure to the system. The informal organization is the third part. Part four is the status and role arrangements within the organization. The fifth part of the system is the physical setting in which the job is performed, plus the technical-engineering-efficiency considerations which link the various jobs together.

Fig. 1. Kast and Rosenzweig's model of the organizational system[1]

[1]Source: (18)

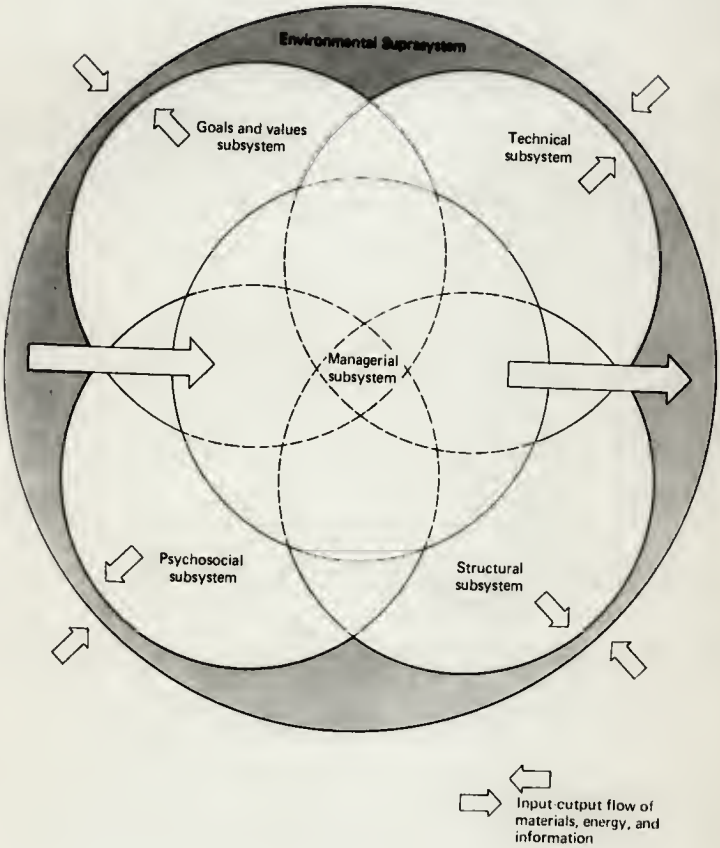
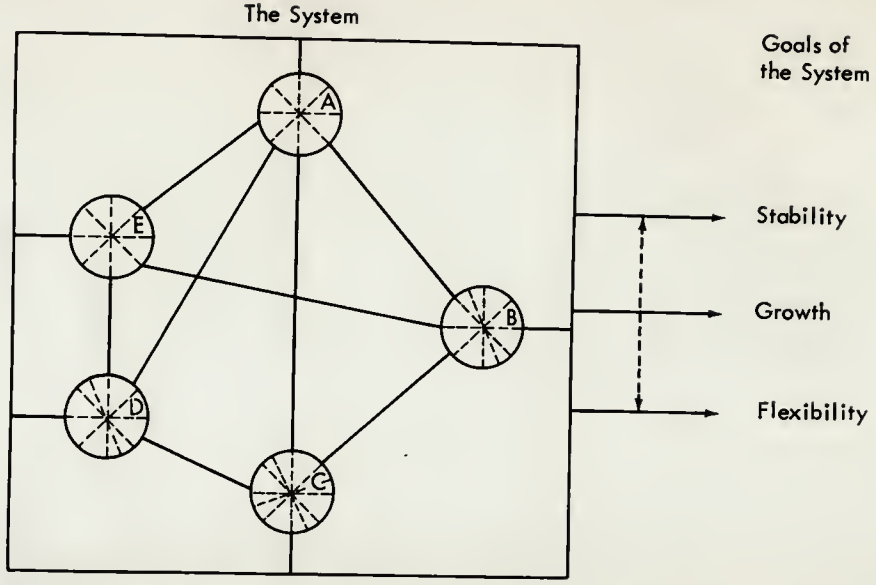

Environmental Suprasystem
Goals and values subsystem
Technical subsystem
Managerial subsystem
Psychosocial subsystem
Structural subsystem
Input output flow of materials, energy, and information

Fig. 2. Scott's social system model[1]

[1]Source: (19)



Key:

1. Circles represent parts of the system.
2. Broken lines represent intrapart interactions, i.e., individuals with other individuals.
3. Solid lines represent interpart interaction.
4. Both the solid and broken lines are the processes which tie the parts of the system together.

Both the Kast and Rosenzweig (18) and Scott (19) models demonstrated the interrelatedness of the parts of the system. The interaction of each subsystem with the other emphasized the need to view the organization holistically. The organization is not a simple technical activity, nor is it simply social in nature. The organization has structure and an integration of human activities around a variety of technologies. These technologies have a direct effect on the character of the entire input-transformation-output process. The effectiveness and efficiency in the use of technology is moderated by the social system. This interrelatedness of the subsystems has significant importance. Changes in technology affect all the subsystems. Failure to treat the organization as a whole integrating system could limit or even decrease the effective attainment of organization goals.

Technology and the Systems Concept

Cooper and Foster (20) discussed the sociotechnical framework of modern organizations. They indicated that the concept of the socio-technical system is based on the fact that any production system requires both a technology--machinery, plant layout, new materials--and a work relationship structure that relates human operators to technology and to each other. Technology makes demands and places limits on the type of work structure possible, while the work structure itself has social and psychological properties that generate their own unique requirements with regard to the task to be done. Cooper and Foster (20) concluded that the increase in advanced forms of technology will intensify the structure of the organization around work technologies and will require more serious thought about man-machine relationships. They asserted that as technology

becomes more complex, so should human behavior. Other organizational theorists have concurred (18, 19).

In the broadest sense, Ramo (21) predicted that the systems approach would be applied throughout modern society to solve a wide variety of problems by relying on the technical-scientific inputs to the system. He contended that systems attitudes would be needed to alter the balance between technological advance and lagging social maturity.

Mann and Hoffman (22) studied the psychological and sociological effects of automation in power plants. They stated that automation has replaced human sensoria in monitoring production processes and has replaced the brain in certain regulatory decision-making functions. Findings of the power plant studies implied that planning for automation, equipment, and process design must be considered not only for its technical effects, but also in terms of its implications for the character of the workers' jobs, the subgroups which will form, and the total human organization that will evolve.

Donaldson (23) submitted that human relations must be emphasized in the development of new foodservice systems. She contended this aspect has not maintained an equitable pace with the technical development of the industry.

Foodservice as an Open System

Donaldson (24) was one of the earliest authors to recognize the value in the systems approach to foodservice management. She emphasized the totality of the systems concept in designing a foodservice operation. Later she (25) suggested a model for decision-making through the

application of systems analysis to the coordination and control of the hospital foodservice department.

Foodservice industry literature gave attention to the systems concept during the last half of the 1960's. Ostenso et al. (26) applied a systems analysis approach to develop a general purpose cafeteria simulator that permitted a quantitative basis for decisions as to the optimal combination of customers, service times, facilities, and operational rules.

Livingston (27) stated that a foodservice system is an integrated program in which the procurement, storage, preparation, and service of foods and beverages, and the equipment and methods required to accomplish the objectives are fully coordinated for minimum labor and optimum customer satisfaction, quality, and cost control. He discussed five separate cases in which successful solutions to some foodservice economic problems were found through a systems approach.

Freshwater (28) provided an illustration of a foodservice system to depict the interrelationships of the subsystems. This model permits evaluation of the effects of current practices and proposed changes in subsystems on the system as a whole. In a similar vein, Berge and Nejelski (29) stated that the most productive foodservices are those where people, materials, machines, and money are integrated into systems aimed at specific objectives and goals. Such an approach intensifies system members' focus on needs, objectives, problems, and realistic solutions.

Studying productivity in a hospital foodservice, Beach and Ostenso (30) used pre-determined motion time techniques (MTM) to determine performance times for entree serving cycles. The results indicated that

normal serving times could serve as inputs for evaluating plans for production and service of varying menu items. Blaker and Donaldson (31) used a systems analysis approach to study the effects of delay and amplification on the behavior of the information-feedback system in a hospital food management system.

Donovan (32) briefly illustrated through hypothetical cases how a systems viewpoint of a foodservice problem differs from a more traditional management view. The key difference was that the systems approach provided an overview of the whole environment within which the problem existed whereas the traditional view does not provide a holistic problem analysis.

Gue (33) provided a conceptual view of the hospital dietary department as a system. He defined major aspects of the system as: the recipe, menu plan, inventory, purchasing, production, and data processing. Konnersman (34) viewed the hospital foodservice organization as a two part logistics system, processing and information and control, each with various subsystems. He viewed the initial input as the diet order from the physician which flows through the information side of the system until vendor orders are placed and food is purchased, processed, and served to the patient. This logistical process continues as the physician evaluates patient progress, thus feeding new inputs into the system.

McGary and Donaldson (35) studied a hospital centralized tray assembly conveyor system. To reduce interruptions and subsequent idle time, four strategic components of the system were presented: system layout and equipment, the menu, work standards, and job position structure. Zolber and Donaldson (36) examined work function activities of

foodservice personnel in hospitals using convenience (assembly-serve) food systems. They suggested that new systems need to be evaluated in light of total systems concepts.

Vaden (37) reviewed the literature of the late 1960's on the application of the systems concept to foodservice management. Although the industry has been characterized as slow to adapt new developments from management research in the past, Vaden suggested that the foodservice industry currently appeared to be accepting modern management theory.

Changes in Foodservice Systems

Current Problems in Foodservice Operations

Beyer and Buchanan (38) summarized the recent trends in foodservice and concluded that the foodservice industry, particularly in health care, is caught in a crunch between a need for increased services at reduced costs therefore necessitating increased productivity and management effectiveness. Additionally, third party agencies have increased demand for improved services by health care institutions through increasing the regulatory impact.

At a conference of the Society for Advancement of Food Service Research in 1976 (39) a list of major issues needing research attention was developed. Issues included energy crisis, poor attitude of employees, failure of management to understand the foodservice business, lack of standards, low productivity, and poor communication in organizations.

Faltermayer (40) asserted that some tasks in the foodservice industry cannot be eliminated but cannot be mechanized; therefore these tasks must be done manually. He also said that these type jobs are becoming more difficult to fill because of egalitarianism, rising

expectations, and government support programs for non-workers. In 1972, Kotschevar (41) reported that finding adequate labor and controlling its cost continue to be major problems of healthcare foodservice management. Powers (42) studied foodservice labor and projected that the foodservice work force will grow three times as fast as the work force as a whole with the fastest growth projected to be in the unskilled group resulting in the need to upgrade wage levels to compete in the labor market.

Another area with ever increasing pressure for change in foodservice is in sanitation standards. With the increased use of convenience food, Rappole (43) recognized a need for operators to become more knowledgeable in the area of sanitation. He suggested a moral as well as a legal obligation for operators to protect the public through service of wholesome food. In addition, Rappole predicted more government involvement in foodservice sanitation regulation.

Greenaway (44) discussed increased government regulation in other aspects of foodservice operations. For example, new energy related building codes and increased energy rates will become serious constraints to the industry.

A 1973 Conference of the Society for the Advancement of Food Service Research (45) concerned the new consumerism impact on foodservice. Speakers at that conference stressed that the consumer not only expects more but is better prepared to make value judgments about the product delivered. They described the new consumer as more educated, with more desires and more frustrations than in the past.

A 1975 Gallup Survey (46) showed that more people were eating away from home. The author projected that the 1985 foodservice workforce will be largely production and service workers but with the greatest growth in

the numbers of management and unskilled workers. The article concluded that increased reliance on "ready food" systems will account for the increased need for a less skilled workforce and improved management practices.

In discussing the service industries in 1972 Levitt (47) saw the service sector of the economy growing in size but shrinking in quality. He attributed this to the fact that these industries fail to view themselves as manufacturers of services, receptive to the same kinds of technological approaches that are used in the factory. More recently Burley (48) suggested the consequences of the industrialization of foodservice needs further study. He contended that in order to increase productivity, the industry must concern itself with better working conditions, enlightened cooperative management practices, joint labor-management productivity committees, improved industrial relations, adequate compensation to compete with other industries, employee participation plans to share the gains of productivity, and a redefinition of service without sacrificing the intangible aspects of fulfilling human needs.

Technological Changes in Foodservice Systems

Ostenso (49) contended that concepts and techniques of food production and distribution are changing at a fairly rapid rate. She identified some of these changes as off-premise production, point-of-service finishing, and automated production and distribution equipment.

Sell (50) described a number of new techniques and equipment used in foodservice operations in Europe, all developed for high volume production, low labor cost, production speed, product uniformity, and space economy. Due to the high cost of equipment, new systems are required

that will take advantage of high volume production and multipurpose uses for the equipment. Such systems remove themselves from traditional work times associated with meal service. Rinke (51) defined and reviewed major trends in modern food delivery systems: (a) convenience foods--purchased; (b) convenience foods--produced on-premise; and (c) automation.

In response to increasing labor costs, Powers (52) purported that the industry is turning to more prepared foods and disposable production and service utensils, changes in equipment, and new methods of meal service. Livingston (53) called for more application of new technologies to foodservice operations to reduce labor as well as food cost.

One of many hospitals that has made changes such as these is Shadyside Hospital in Pittsburg, Pennsylvania where a convenience food system was implemented. Production in this hospital relies heavily on reduced skilled labor, assembly of frozen components, and adaptation of disposable ware with emphasis on microwave galleys for patient trays. In this system, there was a reduction in production personnel but an increase in service personnel (54).

The experience at University of Leeds, England, reported by Glew (55) demonstrated the use of the "cook-freeze" food delivery system in hospitals. Centralization of preparation and plating service required fewer skilled staff and less production space and equipment. Reporting on the same study Millross and Glew (56) explained that the percentage of time spent on the preparation and cooking of food was reduced from eight cooks in the conventional system to three within the cook-freeze system. Portioning and packing of food took more time under the new system, however. Passmore (57) described the Newcastle Hospitals Catering Project as a "food factory" where patient meal production

paralleled the production techniques applied in most modern day product factories.

The literature included many other reports of new methods, techniques, and systems that have proven successful for foodservice operators to provide quality meals within economic constraints (58-61). Whether the system is the ultimate "food factory," cook-freeze, cook-chill, or some combination of the three, the system employs production technology that seeks to simplify tasks and reduce worker discretion by centralizing and specializing functions.

Swartz and Vaden's (14) study of work values among female nonsupervisory personnel indicated the importance to the employee of seeing the results of his/her work. They suggested an uncertain future for seeing the final results of work in a food factory environment. Another implication discussed was a desire for work that developed special abilities. A school foodservice director described the central kitchen in his large metropolitan district (62). He indicated that employees never see the finished meals delivered to district's students and described the work in the central kitchen as very boring.

Job Satisfaction

Job Satisfaction Defined

The Hawthorne studies described by Roethlisberger and Dickson (63) began the ongoing investigations into the "feelings" of workers that may affect their work behavior. Numerous theories of worker satisfaction and motivation have evolved and pervade the literature since the beginning of the human relations era in the 1920's, initiated by the Western Electric studies at the Hawthorne plant in the Chicago area.

Ivancevich and Donnelly (64) defined job satisfaction as the favorable viewpoint of the workers toward the work role they are presently occupying. Landy and Trumbo (65) suggested job satisfaction could be thought of as a feeling or emotion which accompanies thoughts or actions related to the work role. If the work role is accompanied by a feeling of tension, the tendency will be to avoid the work; if the work is accompanied by feelings of pleasure, the tendency will be to approach it.

General Framework

Schwab and Cumming's (66) classic review summarized the major views of satisfaction and performance. They found three general theories dominating the literature: (a) satisfaction leads to performance, (b) satisfaction-performance is moderated by a number of variables, and (c) performance leads to satisfaction. Schwab and Cummings concluded that satisfaction and performance, studied alone or together, are associated with a large number of covariates. They suggested that even recent theoretical work has not accounted for a sufficient number of variables which may influence the strength and direction of the relationship between satisfaction and performance. They further stated that applications of current theories should be studied within the context of well-defined and specified individuals, organizations, and communities. They urged researchers to obtain as much information about potential moderating variables as their data sources and methodological skills permit.

Maslow's (67) need hierarchy described satisfaction as a sort of release mechanism. He theorized that all individuals have a basic set of needs which they strive to fulfill. Maslow also suggested that the

individual works to fulfill each need within a predetermined order. As the operating need is satisfied it ceases to motivate and the next higher need then influences behavior.

Porter (68) studied bottom and middle management jobs and the implication was that different levels within the organization provide the opportunity to satisfy different need levels. Porter concluded that positions higher in the organization structure appeared to provide the potential to satisfy higher order needs. The same relationship appeared to hold for lower level positions and lower order needs.

In contradiction to the Maslow theory, Hall and Nougaim (69) found that as need satisfaction increased so did the intensity of that need. Such a conclusion would be contrary to the needs hierarchy theory since it would be expected that need intensity would be higher at the next level as satisfaction is attained at the operant level.

Another need oriented theory is Herzberg's (70) two factor theory. Herzberg related satisfaction to two types of needs, biologic needs which address man's basic survival and the other need which is to achieve and grow psychologically. He asserted that an organization which attended only to the basic needs of its members, or hygiene, as Herzberg labeled them, would only avoid dissatisfied employees. He contended that a motivated, satisfied workforce could be attained only by providing employees the opportunity for growth. Herzberg suggested accomplishing this through the work itself by diverting some of the resources expended on hygiene endeavors to job enrichment when and where it is appropriate. Although the original theory was based on studies with samples composed of engineers and accountants, Herzberg defended this concept by citing

twelve other studies composed of a broader variety of participants that found results compatible with the "motivation-hygiene" theory.

Armstrong (71) compared job satisfaction of engineers and assemblers. Although the engineers had more job satisfaction than did the assemblers, both occupational groups received more satisfaction from job content than from job context factors. Starcevich (72) studied three levels of managers and found that all three groups regarded job content factors important to both satisfaction and dissatisfaction.

Instrumentality theory is another satisfaction related area that has attracted a large following. Porter and Lawler's (73, 74) "performance ——→ satisfaction" instrumentality offered a circular, systemic explanation for job satisfaction (Fig. 3). Satisfaction is a "derivative" variable inasmuch as satisfaction is derived from perceptions an individual has of equitable rewards in relation to actual rewards. To the extent the perceived equitable reward exceeds the actual reward, both intrinsic and extrinsic, the individual is dissatisfied. If the actual reward exceeds perceived equitable reward, the individual is satisfied.

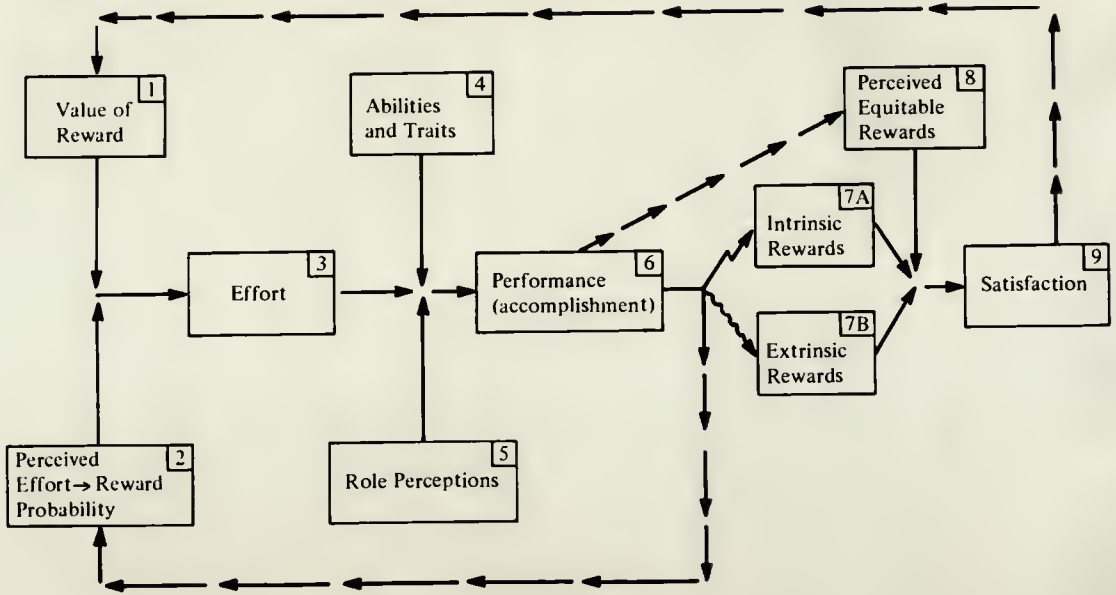
Factors Affecting Job Satisfaction

Scanlan (75) reported an overview of satisfaction, productivity, and motivation. He presented six factors conducive to satisfaction: (a) participative supervision; (b) opportunity to interact with peers; (c) varied duties; (d) high pay; (e) promotional opportunities; and (f) control over work methods and pace.

Blood's (76) work value study with airmen and noncommissioned officers showed that agreement with the Protestant work ethic was directly related to satisfaction and non-Protestant ethic beliefs were

Fig. 3. The Porter-Lawler satisfaction ⟶ performance model[1]

[1]Source: (73)


Value of Reward
1
Abilities and Traits
4
Perceived Equitable Rewards
8
Intrinsic Rewards
7A
Effort
3
Performance (accomplishment)
6
Satisfaction
9
Extrinsic Rewards
7B
Perceived Effort→ Reward Probability
2
Role Perceptions
5

related inversely to satisfaction. Mobley and Locke (77) reported five studies exploring the relationship between the importance of a job aspect (value) to an individual and his/her degree of satisfaction and dissatisfaction with that aspect. They found that the importance of a value to an individual did influence the range of affect which that value could produce; specifically more important values produced a greater range of affect than less important values.

A negative relationship was purported by Shepard (78) to exist between functional specialization and job satisfaction. Subjects included three varying degrees of specialization: assemblers, monitors, and craftsmen. Additionally, Shepard contended that the relationship between specialization and satisfaction appeared to be a general phenomenon not peculiar to only certain segments of the labor force.

Smith et al. (79) reported a general downward trend for the ten year period 1963-1972. The decline may be attributed to factors people bring with them to the job. The data also suggested, however, that experiences encountered on the job may further mediate feelings brought to that job. Organ (80) analyzed labor force data for 1947-1976 and suggested that job satisfaction studies do not show any long term trend toward changes in job attitudes.

A manufacturing company's clerical and managerial personnel were surveyed by Gordon and Arvey (81) to study education and satisfaction with job content. Satisfaction with the work itself did not vary according to the amount of formal education but the more highly educated members of the work force were less satisfied with the way the organization was run.

All full-time males responding to the General Social Survey conducted by the National Opinion Research Center in 1974 comprised the sample for Weaver's (82) satisfaction study. Analysis of the data affirmed that supervisory status made an independent contribution to job satisfaction, that sex was unrelated, and suggested that the zero-order effects of pay, race, occupational prestige, and work autonomy were spurious. In a later analysis, Weaver (83) found craftsmen were more job satisfied than other males in clerical, sales, and professional-technical occupations and that this variation was independent of a number of other variables. Removal of occupational prestige modified the occupation-job satisfaction relationship in a manner which suggested that job satisfaction may arise more from ascribed prestige than from job characteristics such as work autonomy, authority, and income. In still a third analysis Weaver (84) found supervisors to be more satisfied than workers but no significant difference was observed when supervisors and workers worked under one tier of supervision.

Near et al. (85) studied the relationships of life satisfaction and job satisfaction. The result was a "life satisfaction model" (Fig. 4) in which these researchers contended that 10 per cent of life satisfaction can be attributed to influence from job satisfaction. The model also suggested that factors outside the immediate work place could influence job satisfaction.

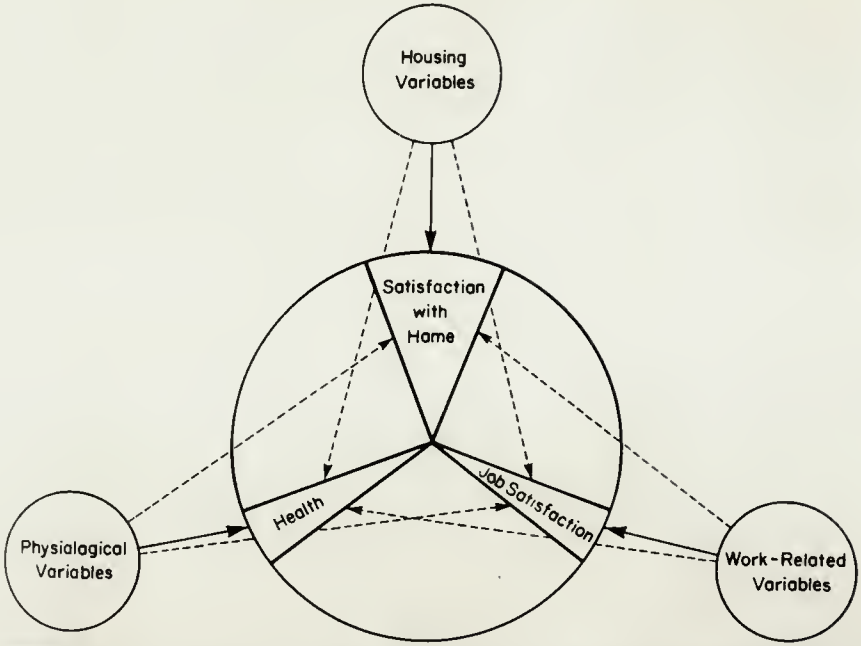
Hospital Studies

Schneider and Olson's (86) research supported Porter and Lawler's instrumentality theory. Their study involved nurses in one hospital where rewards were related to length of service and a second hospital

Fig. 4. Near et al. life satisfaction model[1]

[1]Source: (85)

Components of Life Satisfaction and Associated First and Second Level Determinants [a]



[a] First level determinants are represented by solid arrows and second level determinants are represented by dotted arrows.

where length of service had a minor role in rewards. The Porter-Lawler model would predict that the effort-reward probability would be lower in the first hospital. The results supported this prediction because the rated effort expenditure in the first hospital was significantly lower than the second hospital.

Studying leader reward behavior and subordinate satisfaction and performance, Sims and Szilagyi (87) found positive relationships between positive reward behavior and subordinate satisfaction across all groups within a hospital. They contended that performance-contingent rewards such as recognition, social support, and merit increases were satisfying to administrators, nurses, technicians, and janitors alike.

Palola and Larson (88) studied job satisfaction and work values among five categories of hospital personnel: (a) office workers, (b) paramedics, (c) nurses, (d) nursing auxiliaries, and (e) unskilled workers. Office workers were most satisfied and paramedics least satisfied with the other groups falling between these two groups. Unskilled workers, including dietetic personnel, ranked second highest in job satisfaction.

Logan et al. (89) researched job satisfaction among part-time and full-time hospital employees. While part-time employees showed higher satisfaction, there was no significant differences between the two groups. Additionally, the data showed that part-time workers were more responsive to co-workers and pay but full-time workers were sensitive to promotional opportunities. Logan and co-workers suggested this study indicated that different frames of reference influence the way people perceive their jobs and the satisfaction they derive from them.

Foodservice Studies

Martin and Vaden's (15) study of female, nonsupervisory foodservice workers in large urban hospitals showed that employees with less than six months and those with more than three years tenure were more job satisfied than the six month to three year group. Comparing their findings with those of Swartz and Vaden (14), they found that employees from large institutions tended to place higher value on material objects and believed it was more important to see the results of one's own work and to develop a person's own special abilities.

Hopkins (16) compared job satisfaction of school foodservice workers with the satisfaction of hospital workers in Martin and Vaden's (15) study. Overall the school personnel were more satisfied with their jobs. Compared with national findings of job satisfaction, school foodservice workers were satisfied with supervision, promotion, and co-workers but less satisfied with pay and the work itself.

Calbeck et al. (17) investigated job satisfaction among hospital dietitians and found dietitians were more satisfied than workers on four of five work components: the work itself, supervision, pay, and co-workers. Overall satisfaction with the work was also higher among dietitians.

Turnover rate has been reported as an indicator of satisfaction. Harwood and Brown (90) investigated kinds and numbers of indoctrination and orientation methods and the composition and intensity of the training programs used in hospital foodservices and their relation to job satisfaction and turnover. Hospitals with more indoctrination and orientation had significantly lower turnover rates. The relationship of indoctrination/orientation to satisfaction was not significant. There was a negative correlation between turnover rate and size of workforce. Puls

et al. (91) found that an employee orientation program increased satisfaction and appeared to decrease turnover rate among nonmanagement, full-time hospital dietary workers. Griffith et al. (92) found that the type and amount of training was effective in reducing turnover in hospital foodservices. It appeared that salary, fringe benefits, and working conditions were not causative but may have been contributing factors to turnover.

Knickrehm and Wertz (93) studied personal history characteristics of hospital dietetic workers and found no significant predictability for tenure from the data. They suggested that other job related situational factors were probably more influential on tenure. Flowers and Hughes (94) concluded that management emphasis should not concentrate on turnover but should develop a more existential approach to managing the employees that stay, especially those who stay despite their dissatisfaction.

Job Design

Job Enrichment and Job Design

The term "job design" has been used interchangeably with job enrichment, enlargement, work redesign, task design, and job restructuring. Sirota and Wolfson (95) defined the redesign of a job to provide a worker with greater responsibility, more autonomy in carrying out that responsibility, closure or a complete job, and more timely feedback about performance. Reviewing the subject of task design, Pierce and Dunham (10) attempted to integrate definitions by placing enlargement (horizontal job loading), enrichment (vertical job loading), and task redesign under the single term "task design."

Herzberg's (11, 70) two-factor theory of satisfaction and motivation has gained much attention in the design or enrichment of jobs. The Herzberg theory proposed that work must be designed to incorporate the "motivators," recognition, personal growth in competence, responsibility, advancement and achievement into the work itself. Although the motivation-hygiene theory has received criticism for limited empirical base upon which it rests, the concept has generated numerous job design investigations.

Scott (7) suggested that job design should be based on considerations of the physiologic and psychologic highs and lows humans undergo. Jobs that are highly repetitive may have an underactivating effect on workers which may lead to dysfunctional behavior. Scott concluded that rotating workers through a number of different jobs has had a depressing effect on this phenomenon in some cases.

In a classic review, Hulin and Blood (96) defined enlargement as allowing workers to experience more responsibility and control over the content of their work. Hulin and Blood hypothesized that enlargement of the job is not positively correlated with job satisfaction and that location of the plant and the worker's cultural background must be taken into account. Robey (97) reported experimental results that supported Hulin and Blood's (96) contention that individual differences mediate between objective job characteristics and responses to the job. In contrast to Hulin and Blood's hypothesis, Castellano (98) observed no difference between rural and urban employees for satisfaction in one suburban plant. The implication was offered that workers may take on the value system, norms, and required behavior patterns of the organization. Stone (99) studied the moderating effect of work-related values on

the job scope-job satisfaction relationship. From the data it appeared job enrichment would be reacted to no less positively by alienated than by integrated workers.

Job Redesign. Many observers have agreed that job design has been misused since its inception in the mid 1960's. Whitsett (100) discussed the ills of using enrichment as a cure-all for organizational problems. He stressed that job redesign can only be effective when positions are poorly designed. Whitsett offered three characteristics of a well-designed job: (a) the job is a complete piece of work and it directly affects someone; (b) the worker must have some control and decision-making power over the job; and (c) feedback is essential. Feedback may come from the supervisor but it is better when it comes from the customer and the feedback must be directly to the individual relative to the contribution his or her work has made to the customer.

Whitsett (100) described several indicators which suggest if a job is a potential candidate for redesign. These indicators do not automatically imply that redesign should be effected. For example, employees who feel grossly underpaid will not receive job design efforts positively. Also, implementation of a new system may be the appropriate time for job redesign or the most inopportune time. Finally, some workers are happy to perform work that is repetitive and not mentally taxing.

Walton (101) viewed restructuring of work as any and all of many types of change in the work situation. He stated that work restructuring efforts should consider all aspects of work with the aim of creating an internally consistent work culture--one which ideally enlarges workers' scope for self-management, enhances their opportunity for learning new

abilities, increases their identification with the product and the production process, and promotes their sense of dignity and self-worth. Walton recognized that work restructuring depends on the type of technology, the skills and predispositions of the workforce, and economic factors. The Topeka and Kalmar experiments reported by Walton stressed business success and quality of life with equal import and were believed to contribute to the success of these efforts.

Yorks (102) directed the responsibility of job design outcomes to management. He asserted that if workers are told they are expected to be responsible, yet management structures jobs in which responsible behavior is not important, the result will be apathy and irresponsibility. Yorks stated that job design changes affect other parts of the organization. Interrelated jobs as well as managerial roles will be affected by job design. He suggested that management should be prepared to deal with these developments and that job design is not a singular task but part of the whole system and should be approached as such.

Based on his experience with job redesign, Chartrand (103) suggested several principles for effective design efforts: (a) management must be committed to the success of the new design; (b) planning must be detailed, cautious, and involve line managers as well as a professional organization development specialist; (c) labor organizations must be involved and committed; (d) employee involvement is essential; (e) line supervisors must be prepared for their inevitable role change from "boss" to "consultant"; (f) pre- and post-design variables such as productivity, absenteeism, grievances, and return on investment should be measured; and (g) the organization must be structured to accept redesign.

Hackman (12) questioned the extended life expectancy of effective use of job redesign in modern management practice unless its use and proper implementation are approached seriously. He offered the following ingredients for effective implementation:

(a) Key individuals responsible for the work redesign project move toward the especially difficult problems, and do so early.

(b) A theory-based diagnosis of the target job(s) is undertaken prior to implementation.

(c) Specific changes are planned explicitly on the basis of the diagnosis and are done so publicly.

(d) Contingency plans are prepared ahead of time for dealing with the inevitable "spin-off" problems and opportunities that emerge from work redesign activities.

(e) Those responsible for the work redesign project are ready and able to evaluate, iterate, and evaluate again throughout the life of the project.

Job Enrichment Studies. Budd (104) experimented with job enrichment and found the results positively related to job satisfaction, increased productivity, reduced costs, accelerated learning time, reduced turnover, and improved group effectiveness. Budd also concluded that the real threat of job enrichment was not to the employee but to the supervisor whose role changes.

Copenhaver (105) attributed the dollar saving in operating costs to a program of enrichment and training in one organization. The enrichment program initiated an organizational restructuring that resulted in forty-two position abolishments.

Powers (106) reported an 11 per cent quarterly improvement in units produced per direct dollar of labor cost as the result of a job enrichment program in one industrial organization. Jobs were designed based on three specifications: (a) they contained a complete piece of work;

(b) persons performing jobs were given more decision-making and control over how the work was completed; and (c) the worker got constant feedback from the work itself.

The Chase Manhattan Bank implemented a job enrichment program in its money transfer division. Robinson (107) reported the step-by-step procedure the bank used to make the program work. Lateral job loading, vertical job loading, teamwork, customer identification, and feedback were five techniques believed to be keys to the success of the Chase Manhattan program.

Velghe and Cockrell (108) described the job enrichment program at North Kansas City Memorial Hospital. The janitorial staff was trained in new techniques of maintaining hospital sanitation. The education was claimed to have enriched the jobs resulting in increased satisfaction and improved performance and productivity.

Lawler and Hall (109) explored three attitudes that might be linked to job design. A sample of 291 scientists completed questionnaires providing the data that indicated job involvement, need satisfaction, and intrinsic motivation should be thought of as separate and distinct attitudes toward a job. These three types of attitudes were found to be related differentially to job design factors. Job satisfaction was related to such job characteristics as the amount of control the job allowed the incumbent and the degree to which it is seen to be relevant to the incumbent's valued abilities.

Telephone company employees on thirteen different jobs participated in a study by Hackman and Lawler (9) investigating the relationship between "higher order needs" (e.g., obtaining feelings of accomplishment and personal growth) and jobs described in terms of four core dimensions

(variety, autonomy, task identity, and feedback). They found that when jobs were high on these four core dimensions, employees who were desirous of higher order need satisfaction tended to have high motivation, high job satisfaction, be absent from work infrequently, and be rated as good performers by their supervisors. Brief and Aldag (110) found support for the moderating effect of higher order need strength on the job characteristics-employee reactions relationships among correction institution employees. Wanous (111) found higher order need strength moderated the job characteristics-job satisfaction relationship more than the Protestant work ethic or urban-rural background for telephone operators.

The case of a job redesign project that failed was reported by Frank and Hackman (112). The project involved the establishment of semi-autonomous work groups within a stock transfer department of a bank. Although the jobs and many aspects of the organizational structure were changed, the work itself was not affected.

Locke et al. (113) contended that enrichment for three groups of federal clerical workers had no effect on worker attitudes. The experiment did change productivity, however, by more efficient use of manpower, elimination of unnecessary operations, and feedback and competition, while decreases in absences were attributed to initial changes in morale based on the expectation of extrinsic rewards. They concluded that attitudes were not improved because the expectation and desire for such rewards had not been met. A simulation experiment by Umstot et al. (114) yielded results that indicated job enrichment had a substantial positive impact on satisfaction but little effect on productivity, whereas goal setting had a substantial positive impact on productivity but little effect on job satisfaction. The sample consisted of part-time employees

solicited specifically for the study. The task involved identifying and coding parcels of land.

Characteristics of Jobs

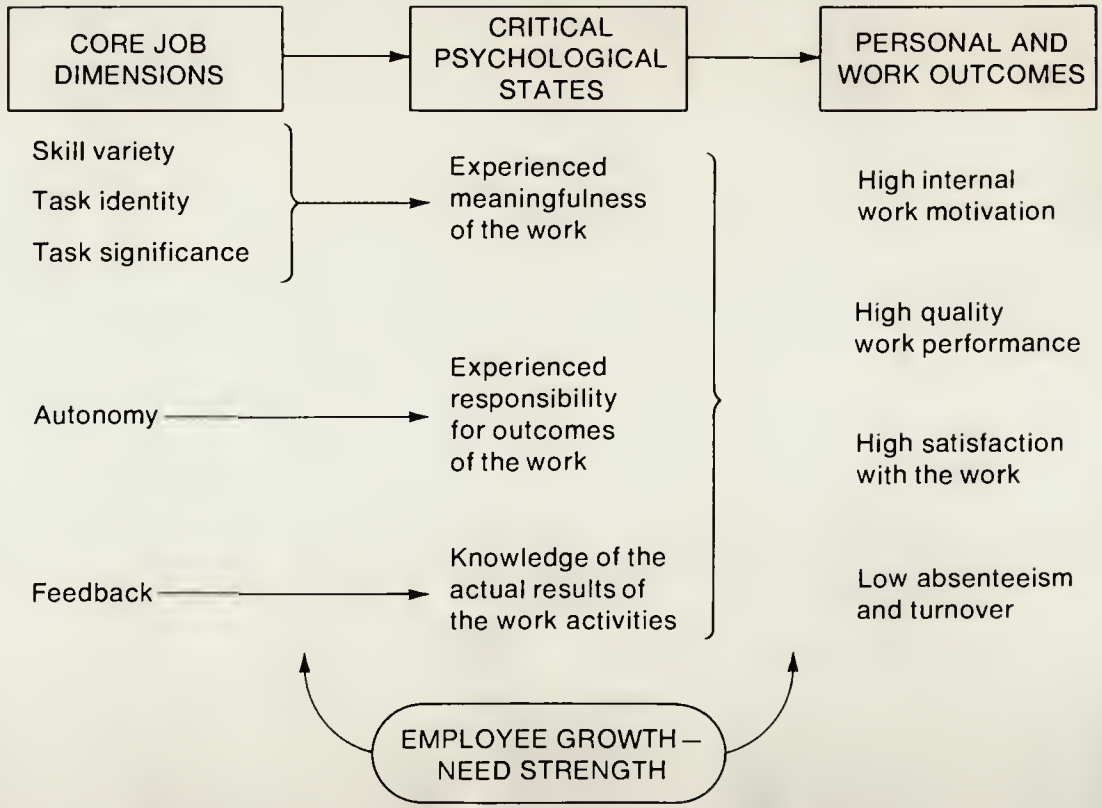
Turner and Lawrence (115) attempted to focus on the objective characteristics of jobs and identified six requisite task attributes. They attempted to relate these to employee satisfaction. Hackman and Lawler (9) suggested four core dimensions for jobs: variety, task identity, autonomy, and feedback. They found each one positively related to internal work motivation, general job satisfaction, and job involvement. Brief and Aldag (110) found similar results with 104 employees working with inmate rehabilitation.

Job Characteristics Model. Hackman et al. (116) later developed a job characteristics theory identifying five core dimensions of a job: skill variety, task identity, task significance, autonomy, and feedback. The job characteristics model illustrates relationships between these five core job dimensions, three critical psychological states of workers, and possible beneficial personal outcomes or affective responses and positive work outcomes. The model (Fig. 5) also shows how these relationships are moderated by individual growth need strength.

The Hackman et al. (116) theory is a strategy for the design of jobs. They define three critical psychological states: experienced meaningfulness of the work, experienced responsibility for the work outcomes, and knowledge of the results of actual work activities. These psychological states are a function of the job characteristics. Experienced meaningfulness includes workers' perceptions that work is worthwhile relative to some values they find acceptable. Experienced responsibility involves

Fig. 5. Hackman et al. job characteristics model[1]

[1]Source: (116)


CORE JOB DIMENSIONS
CRITICAL PSYCHOLOGICAL STATES
PERSONAL AND WORK OUTCOMES
Skill variety
Task identity
Task significance
Experienced meaningfulness of the work
Autonomy
Experienced responsibility for outcomes of the work
Feedback
Knowledge of the actual results of the work activities
High internal work motivation
High quality work performance
High satisfaction with the work
Low absenteeism and turnover
EMPLOYEE GROWTH—NEED STRENGTH

the workers' beliefs they are responsible for the outcomes of their efforts. Knowledge of results relates to ability of workers to determine whether or not outcomes are satisfactory.

Job characteristics are the core dimensions of the job. Three of the dimensions are believed to contribute to meaningfulness of the work: skill variety, task identity, and task significance. Skill variety is the degree to which successful performance of a job requires a number of different skills. Task identity is the degree to which a job results in a whole job; whereas, task significance is the degree to which a job impacts on others. According to the theory, the job characteristic, or core job dimension which leads to experienced responsibility is autonomy or the degree of freedom the worker exercises for the job. The final core dimension, or feedback, is believed to contribute to knowledge of results. Feedback is information telling the worker the effectiveness of his/her efforts. The most influential feedback is considered that which the worker obtains through self-checks against predetermined standards.

Hackman et al. further explained that to the extent a job possesses the five core dimensions, that job will prompt high internal work motivation. They referred to jobs possessing high levels of the five core dimensions as having motivating potential. Hackman et al. recognized that some people have strong needs for personal accomplishment, for learning and developing themselves, and challenging themselves. The authors contended this type of person is high in "growth need strength." Growth need strength predicts who is likely to become internally motivated on a job. Hackman et al. cautioned that although a person is low on growth need strength and therefore less likely to respond to an enriched job,

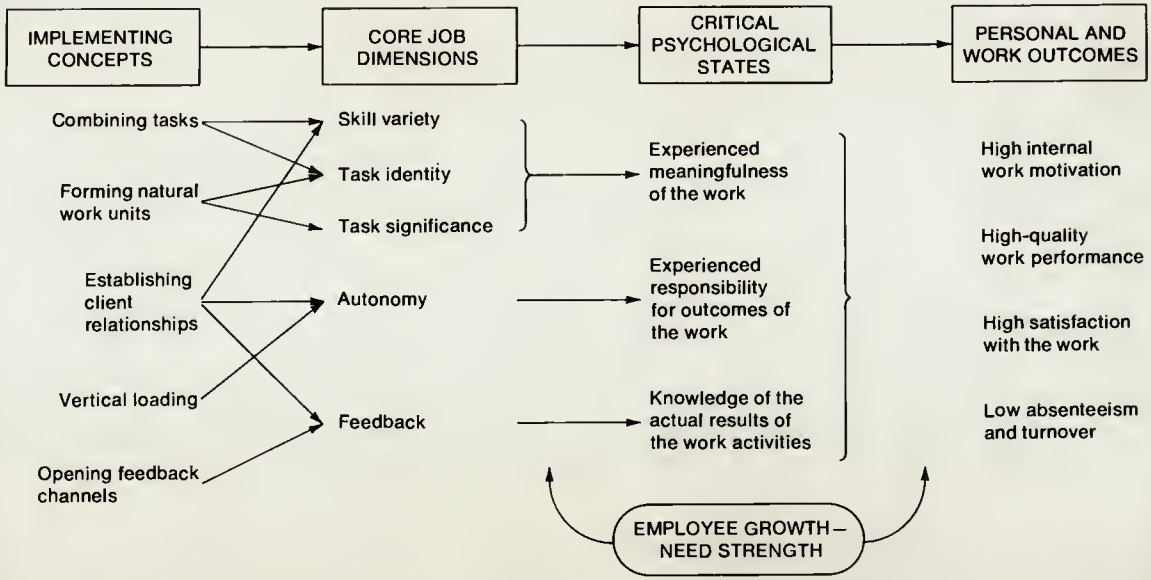
he/she should not be precluded automatically from trying more challenging work. Growth need strength could develop under different circumstances.

Job Diagnostic Survey. Hackman et al. (116) recommended using an instrument which they developed, the Job Diagnostic Survey or JDS, to diagnose the nature of "people problems" before enriching jobs. The JDS provides measures of all the variables contained in the Hackman et al. theory (Fig. 5) with the exception of worker performance, absenteeism, and labor turnover. If the resultant data indicates job redesign is appropriate, they propose five implementing concepts: (a) forming natural work units; (b) combining tasks; (c) establishing client relationships; (d) loading jobs vertically; and (e) opening feedback channels (Fig. 6). The Job Diagnostic Survey's validity was reported by Hackman and Oldham (117) as the result of a test with 658 employees working on sixty-two different jobs at seven organizations. Within-scale item correlations were compared to between-scale item correlations in an attempt to establish discriminant validity of the scales. Internal consistency estimates ranged from .56 to .88, while between-scale correlation medians ranged from .12 to .28.

Studies Using the JDS. Baird (118) used the Job Diagnostic Survey and the Job Descriptive Index to compare the relationship of performance to satisfaction in stimulating and non-stimulating jobs. Stimulating jobs were defined as those with high motivating potential. For the 167 state agency employees studied, there was no difference in work satisfaction between high and low performers on stimulating jobs. The jobs ranged from administrative to secretarial and clerical positions. Performance was more strongly related to work satisfaction when job

Fig. 6. Hackman and Oldham's job characteristics model with implementing concepts[1]

[1]Source: (116)


IMPLEMENTING CONCEPTS
CORE JOB DIMENSIONS
CRITICAL PSYCHOLOGICAL STATES
PERSONAL AND WORK OUTCOMES
Combining tasks
Forming natural work units
Establishing client relationships
Vertical loading
Opening feedback channels
Skill variety
Task identity
Task significance
Autonomy
Feedback
Experienced meaningfulness of the work
Experienced responsibility for outcomes of the work
Knowledge of the actual results of the work activities
High internal work motivation
High-quality work performance
High satisfaction with the work
Low absenteeism and turnover
EMPLOYEE GROWTH–NEED STRENGTH

stimulation was low. Feedback from the organization, however, appeared to have the most potential to link performance to satisfaction. Additionally, Baird suggested directly measuring higher order need strength, since it may moderate the satisfaction-performance relationship.

Katz (119) investigated the relationships between general job satisfaction and the five core dimensions for over 3,000 workers from four different governmental organizations. The analysis showed respondents within the four to thirty-six month interval of job longevity had the strongest relationships between job satisfaction and the various task dimensions. Data from veteran workers (those with greater than ten years job longevity) showed no significant relationships between satisfaction and job characteristics.

Oldham et al. (120) administered the JDS to 201 bank employees in twenty-five different clerical jobs to study the moderating effects of growth need strength and level of satisfaction with work context factors on employee responses to enriched jobs. The data showed employees with strong growth needs and job context satisfactions responded more positively to enriched jobs than did employees with weak needs for growth and/or those who were dissatisfied with work context. The implications offered by Oldham et al. were that prior to enriching jobs, practitioners should carefully assess both individual differences in needs and contextual sources of dissatisfaction.

An investigation by Dunham (121) showed that persons in some subunits of a large merchandising organization responded favorably to enlarged jobs, as indicated by JDS measures of the five core dimensions, while others did not. Although a significant relationship existed between task design and affective response measures, the relationship was

moderated by job function which may be explained in terms of environmental elements which affect the worker's focus on the task.

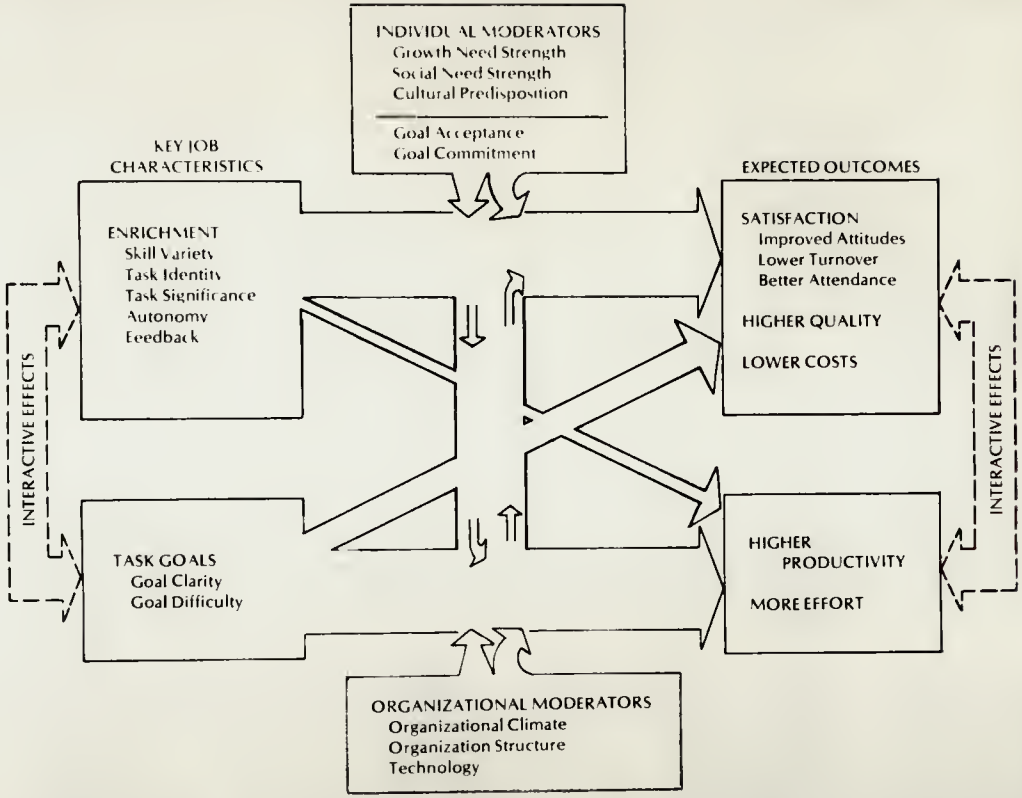
Griffin and Chonko (122) questioned whether people preferred one job characteristic over another. The results of their study with sixty-five part-time university students (full-time employees of different firms) showed that workers in this sample preferred feedback and autonomy to skill variety and task identity. Griffin and Chonko suggested that employee preference for different job characteristics indicated that management should concentrate on enhancing those characteristics preferred by their employees thereby possibly improve satisfaction, performance, and attendance and decrease turnover.

There was little or no consistent variance in satisfaction explained by the interactions of individual differences (urban-rural, anomie, Protestant ethic, and higher order need strength) and job characteristics in a study by Kidron (123). The results were obtained from three diverse samples: (a) an insurance company, (b) a hospital, and (c) a university personnel department. Although recognizing the existence of moderators, Kidron questioned theoretical and practical importance of individual differences.

Umstot et al. (124) reviewed the empirical literature relating to job enrichment and task goals. They examined studies related to the interaction of job characteristics, individual differences, and organizational characteristics and presented an integrated model (Fig. 7) to explain the relationships. In the model, Umstot and his co-workers suggested the variables that may be necessary for a more complete statement of job design. Organizational moderator variables suggested were technology and organizational climate and structure.

Fig. 7. Umstot et al. integrated model of job design[1]

[1]Source: (124)


INDIVIDUAL MODERATORS
Growth Need Strength
Social Need Strength
Cultural Predisposition
Goal Acceptance
Goal Commitment
KEY JOB CHARACTERISTICS
ENRICHMENT
Skill Variety
Task Identity
Task Significance
Autonomy
Feedback
EXPECTED OUTCOMES
SATISFACTION
Improved Attitudes
Lower Turnover
Better Attendance
HIGHER QUALITY
LOWER COSTS
INTERACTIVE EFFECTS
TASK GOALS
Goal Clarity
Goal Difficulty
HIGHER PRODUCTIVITY
MORE EFFORT
INTERACTIVE EFFECTS
ORGANIZATIONAL MODERATORS
Organizational Climate
Organization Structure
Technology

Job Characteristics Inventory. Sims et al. (125) developed and tested the Job Characteristics Inventory (JCI), an instrument paralleling the Job Diagnostic Survey. Results of studies in a medical center and a manufacturing firm demonstrated the reliability and validity of the instrument. The job characteristics measured by the JCI include the six original dimensions of the Hackman and Lawler (9) work: (a) four core dimensions: variety, autonomy, task identity, and feedback; and (b) two interpersonal dimensions: dealing with others and friendship opportunities.

Keller et al. (126) found that the core dimensions of the JCI were related positively to intrinsic job satisfaction and that the interpersonal dimensions were positively related to socially-derived satisfactions. The sample included ninety-three supervisors and 270 non-supervisors. All subjects were professional research and development personnel.

With both the JDS and the JCI available, the opportunity exists for comparative studies of job dimensionality using both instruments. Pierce and Dunham (127) combined the two instruments and administered the questionnaire to 155 insurance company employees to compare the dimensionality and internal consistency of the JDS and the JCI. The JCI was found to be superior to the JDS. Pierce and Dunham proposed that the difference may be due to format differences or positioning of the measurement items in the questionnaire. Also, they indicated their study included a relatively small sample. These researchers did not offer a preference for the JCI but did suggest use of multiple methods in job design research.

Taber et al. (128) also recommended multiple approaches to job design. They showed that significant relationships existed between objectively measured job properties and perceived job characteristics. The sample involved 309 industrial workers on a variety of jobs. The perceived characteristics, however, were related more strongly to satisfaction and motivation variables. Hackman et al. (116) concluded that evaluative measures such as the Job Diagnostic Survey can "red flag" possible dysfunctional situations. Descriptive procedures such as activity analysis, critical incidents reports, motion analysis, and human factors assessments can be employed to diagnose the jobs more completely.

Job Design and Foodservice Operations

Bobeng (129) reviewed the job design literature and illustrated how a conventional hospital foodservice with decentralized patient tray service might be centralized without sacrificing any of the five core dimensions of the workers' jobs. A centralized system could be "de-enriching" if the initial design failed to include the five implementing steps suggested by Hackman et al. (116).

Billings et al. (130) reported the results of a quasi-experiment involving the conversion of an elaborate decentralized patient tray service to a less elaborate centralized system. The conversion showed a change in six work structure variables: job importance, task variety, required task effort, mobility, time pressure, and feedback. Contrary to expectations the changeover did not alter the social structure, satisfaction, or absenteeism.

METHODOLOGY

Research Design

The objective of the research was to compare the design of the jobs in conventional and more highly technical hospital foodservice. Data were collected in five conventional and four more highly technical hospital foodservices (cook/chill and cook/freeze) in Kansas, Missouri, and Nebraska. The Job Diagnostic Survey (JDS) (Appendix A) and the accompanying Job Rating Form (Appendix B) developed by Hackman and Oldham (117) were used for this comparison. Nonsupervisory employees in each hospital completed the JDS. Supervisors completed the Job Rating Form for each job included in the study. Also, supervisors completed a performance evaluation form adapted from that used by Hopkins (16) (Appendix C) as a measure of employee job performance. In addition, absentee data on each employee were collected along with various organizational data to assist in analysis of study findings.

The JDS is based on the job characteristics model developed by Hackman et al. (13, 116, 117). The job characteristics model is a theory of motivation through the design of work. The JDS is structured to measure all the variables of the job characteristics model except employee work performance and absentee data. The performance evaluation form completed by the supervisor provided a measure of employee performance. The organization attendance records provided absentee data.

Preliminary Work

The ARA Food Services Company[1] Midwest Region's Vice President was contacted by telephone to explain the nature of the research and request his assistance. The ARA Food Services Company was selected as the possible source for the research sites because ARA had client hospital foodservices that met the desired characteristics for the study. Also, it was believed that having all hospitals with ARA contracts would provide a degree of experimental control because of the consistency in management systems designed by the company. All were to be within the midwest and close proximity to the researchers. All were to be general hospitals ranging from 200-500 beds which is the predominant type of hospital in the United States. An equal number of conventional and highly technical foodservices were to be included in the sample. A personal meeting with the Vice President was arranged. During this meeting ten foodservices were identified tentatively; five hospital foodservices of each type. A letter (Appendix D) was forwarded through the Vice President to each of the ten foodservice unit managers. This letter detailed the research project and officially requested the organization's participation in the study. Each manager then was contacted by telephone to confirm the organization's participation and to identify a possible date for JDS administration and collection of other data. One hospital (one with a technical system) preferred not to participate, leaving nine organizations as the final test sites. An

---

[1] ARA Food Services Company is a food management company which contracts with various types of institutions to manage foodservice operations.

introductory visit was made to each hospital to meet the staff and become acquainted with the operation. (A brief description of each organization is listed in Appendix E.)

The JDS was administered in a pilot study prior to the actual research. This pilot study was conducted at a community hospital foodservice not included in the study. The foodservice was a conventional type system. The objective was to provide the researcher experience in data collection procedures and to suggest refinements to the experimental design.

All preliminary work was completed during February and March 1978. Actual data collection was then scheduled for April and May 1978.

Sample

Nonsupervisory foodservice personnel in the nine hospitals comprised the sample. None of the foodservices were unionized. The hospitals were general hospitals ranging in size from 200 to 500 beds (Table 1).

Research Instruments

The Job Diagnostic Survey

The JDS (117) which was completed by the hospital foodservice employees, is comprised of eight sections: Sections I and II, job dimensions; Sections III and V, critical psychological states, and affective responses or general satisfaction and internal work motivation; Section IV, affective responses or specific satisfactions; Sections VI and VII, individual growth need strength; and Section VIII, biographical information. Nineteen scores were provided by these sections (Table 2). In addition, a motivating potential score, or MPS, is derived from the job

Table 1: Hospital foodservices by system type

conventional	highly technical
1. Lutheran Medical Center Omaha, Nebraska 300 beds	1. St. Elizabeth Community Health Center Lincoln, Nebraska 208 beds
2. Central Kansas Medical Center Great Bend, Kansas 200 beds	2. St. Joseph Hospital Kansas City, Missouri 300 beds
3. Providence St. Margaret Health Center Kansas City, Kansas 300 beds	3. Immanuel Medical Center Omaha, Nebraska 350 beds
4. North Kansas City Memorial Hospital Kansas City, Missouri 320 beds	4. Creighton Memorial St. Joseph Hospital Omaha, Nebraska 433 beds
5. Menorah Medical Center Kansas City, Missouri 454 beds	

Table 2: JDS scores

section	score
I, II	job dimensions: skill variety task identity task significance autonomy feedback from the work feedback from agents dealing with others
III, V	critical psychological states: experienced meaningfulness experienced responsibility knowledge of results
III, V	affective responses to the work: general satisfaction internal work motivation
IV	affective responses to the work: pay satisfaction security satisfaction social satisfaction supervisory satisfaction growth satisfaction
VI, VII	individual growth need strength: "would like" format "job choice" format

dimensions scores, and provides an index that reflects the overall potential of a job to prompt high internal work motivation on the part of job incumbents.

A total of eighty-three items are presented on a Likert-type scale in addition to nine biographical items. The number of items ranges from as few as seven in Section I to as many as fifteen in Section III.

Job Dimensions. The five core job dimension scores were obtained from items in Sections I and II. Sections I and II also provide scores for feedback from agents and dealing with others. These two dimensions have been found to be helpful in understanding jobs and employee reactions to them. Section I provided a single item for each job dimension in the following format:

1. How much variety is there in your job? That is, to what extent does the job require you to do many different things at work, using a variety of your skills and talents?

1---------2---------3---------4---------5---------6---------7

Very little; job requires me to do the same routine things over and over again.	Moderate variety	Very much; the job requires me to do many different things.

Respondents circled the number which best reflected the amount of variety in their jobs.

Section II provided two items for each of the seven job dimensions; one phrased direct or positively and one phrased reversed or negatively. Respondents were asked to indicate the accuracy of each statement listed in describing the objective characteristics of the job using a seven

point scale, ranging from "very inaccurate" to "very accurate." A sample statement (in reversed format) for Skill Variety is:

_____ 1. The job is quite simple and repetitive.

Critical Psychological States. Scores for the three critical psychological states, Experienced Meaningfulness of the Work, Experienced Responsibility for Work Outcomes, and Knowledge of Results, were obtained from Sections III and V of the JDS. In Section III, respondents indicated their agreement or disagreement with a number of statements about their work experience. A seven point scale ranged from "disagree strongly" to "agree strongly." A sample statement follows for Experienced Responsibility for Work Outcomes:

_____ 1. I feel I should personally take the credit or blame for the results of my work on this job.

A projective format was used in Section V. Respondents were asked to "think of other people in your organization who hold the same job as you do" and to indicate how accurate each of a number of statements described the feelings of those people about the job. The same seven point agree-disagree scale of Section III was used. The content was similar to those in Section III, except most items were prefaced by phrases such as "Most people on this job . . . ." An example of an Experienced Meaningfulness item is:

_____ 1. Most people on this job find the work very meaningful.

There were four items tapping Experienced Meaningfulness of the Work (two in Section III and two in Section V); six items for Experienced Responsibility for Work Outcomes (four in Section III and two in Section V); and four items for Knowledge of Results (two in Section III and two

in Section V). Eight items were positively stated; six items were negatively stated.

Affective Reactions: General Satisfaction and Internal Work Motivation. Sections III and V items also assessed general satisfaction and internal work motivation. The items for these scales were intermixed with those for Critical Psychological States, described above. Five items tapped general satisfactions (three in Section III and two in Section V) and six items tapped internal work motivation (four in Section III and two in Section V). Two general satisfaction items and one internal motivation item was in the reversed format. The same seven point agree-disagree scale of Section III was used.

A sample general satisfaction item (Section V, reversed format) is:

_____ 1. People on this job often think of quitting.

A sample internal work motivation item (Section III, direct format) is:

_____ 1. My opinion of myself goes up when I do this job well.

Affective Reactions: Specific Satisfactions. Five specific satisfaction scores were obtained from Section IV of the JDS to measure satisfaction with specific aspects of the jobs. Employees responded to "How satisfied are you with this aspect of your job?" for each item on a seven point scale ranging from "extremely dissatisfied" to "extremely satisfied." An item for each of the five job aspects is given below:

Job Security:

_____ 1. How secure things look for me in the future in this organization.

Pay and Compensation:

_____ 1. The amount of pay and fringe benefits I receive.

Social:

_____ 1. The chance to get to know other people while on the job.

Supervision:

_____ 1. The amount of support and guidance I receive from my supervisor.

Growth:

_____ 1. The amount of personal growth and development I get in doing my job.

Individual Growth Need Strength. Sections VI and VII measured the respondents' growth need strength using two types of formats: a "would like" format and a "job choice" format. In Section VI, respondents were asked to indicate the degree to which they would like to have each of eleven conditions present in their jobs. Five items (e.g., "very friendly co-workers") were not relevant to individual growth needs, and were not scored. A sample item is:

_____ 1. Chances to exercise independent thought and action in my job.

All eleven items referred to generally positive or desirable aspects of the workplace. To emphasize to the respondents that most items are seen as desirable to most people, the seven-point response scale ranged from "Would like having this only a moderate amount--or less" through "Would like having this very much" to "Would like having this extremely much." To further reinforce that these items were to be marked differently from those presented earlier in the instrument, the numerical values for responses ranged from four to ten. The item scores were transformed to a standard one to seven scale prior to analysis by subtracting a constant of 3.0 from each item.

Growth need strength was measured in Section VII by asking respondents to indicate their relative preferences for pairs of hypothetical jobs. A sample item is:

JOB A				JOB B
A job where you are often required to make important decisions.				A job with many pleasant people to work with.
1	2	3	4	5
Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

Respondents circled the number which reflected their own relative preference between the two jobs. There were twelve items (i.e., pairs of hypothetical jobs) in the section. In each item a job with characteristics relevant to growth need satisfaction was paired with a job which has the potential for satisfying one of a variety of other needs. In half the items (as the example above) the choice was between jobs which both have positive characteristics; in half the choice was between jobs which both have predominantly negative features (e.g., a job where there is a real chance of being laid off vs. a job with little chance to do challenging work). The growth relevant job was presented in half the items as "JOB A" and in half as "JOB B."

Biographical Information. Biographical data was obtained in Section VIII. The type of data requested was sex, age, education, basis of employment (part-time or full-time), tenure, foodservice experience, and community size.

The Job Rating Form

As a supplement to the JDS, the Job Rating Form (117) was completed by the supervisors most familiar with the jobs being studied. This instrument has twenty-one items adapted from Sections I and II of the JDS. The purpose of this brief instrument was to provide an additional measurement of the core dimensions of each job as suggested by Hackman and Oldham (117).

The Performance Evaluation Form

The performance evaluation form completed by each employee's supervisor provided assessment of nineteen aspects of job performance within six dimensions: quality of work, quantity of work, ability to follow instructions, initiative and judgment, attendance, and personal relations. Each dimension was composed of two to four items. Each item was rated on a five point scale of superior, above average, satisfactory, needs improvement, and unsatisfactory.

Data Collection Procedures

Following the introductory visit to each hospital a letter (Appendix F) was forwarded to each foodservice manager confirming the data collection date. One full day was spent at each hospital for data collection. Each visit began with a briefing for the foodservice manager and all other key supervisory personnel. Each manager arranged for the researcher to have one person within the organization assist with the data collection that had to be extracted from the organization's records. In a few cases the manager was the person that assisted. JDS administration followed the briefing and continued until all possible employees had participated.

Supervisors received their instructions during periods when no one was completing the JDS.

Job Diagnostic Survey

The researcher administered the questionnaires to the foodservice personnel in groups of varying sizes and occasionally on an individual basis. The instrument, an envelope, and a pencil was placed at the seat of each respondent prior to his/her arrival. Questionnaire completion times averaged approximately thirty minutes; however, a few respondents needed a full hour while a few took only twenty minutes. Standardized instructions (Appendix G) were given verbally each time the instrument was administered. Employees were assured that responses would not be seen by supervisors. Meeting rooms and dining rooms were used for administration of the instruments. Managerial personnel were not present during instrument administration.

Each questionnaire was assigned an identification number. The same number was printed on a card attached to the instrument. Respondents were asked to sign the card, detach it, and give it to the researcher before completing the questionnaire. Only two people refused to sign the cards. This identification process allowed the researcher to match supervisory job rating forms and performance evaluations with questionnaire responses. After completion, each respondent placed the questionnaire in the available envelope, sealed it, and returned it directly to the researcher.

Forms Completed by Supervisors

Supervisors were asked to complete a Job Rating Form for each job for which they were directly responsible for supervision and a performance

evaluation form for each employee they supervised. Standardized verbal and written instructions (Appendix H) were given to each supervisor during the research visit. In addition to receiving all necessary forms, the supervisors were given a pre-addressed envelope in which to forward completed forms directly to the researcher. Two weeks were allowed for supervisors to complete job ratings and performance evaluations. As each envelope was received with appropriate forms, a memo (Appendix I) was mailed to the supervisor verifying that the forms had been received. In the event something was missing, the memo was annotated accordingly. Seven Job Rating Forms were not returned and five were not completed properly and were not used in the analysis.

Other Data Collected

While at each facility, other information was collected to aid interpretation of results and provide additional research data. Also, a form (Appendix J) was completed to document the visit. Other data included absentee data for each employee, an organizational chart, job descriptions, pay scales and individual employee wage rates, personnel policies, and work schedules. The researcher gathered these data when the JDS was not being administered. A form (Appendix K) was used to record individual data according to the identification number assigned to the JDS. A checklist (Appendix L) also was maintained during each visit to assure that all appropriate data had been gathered.

Job Categorization

Since this study investigated job design, it was necessary to establish common job categories for all jobs at the nine hospitals to

provide a standard base for comparisons. A preliminary job categorization was developed using the Dictionary of Occupational Titles (131) and the Occupational Analysis for the Hospital Food Service Department from U.C.L.A. Allied Health Professions Project (132). The job titles from those two references, however, were not sufficiently detailed; therefore, a more definitive classification was developed for this study.

From review of the job descriptions provided by the nine hospitals a list of twenty-five job titles was compiled. Further review reduced the list to eleven job categories. A panel of three graduate students with foodservice management experience each independently evaluated the job descriptions and assigned them to one of the eleven categories. Differences in assignment of jobs to categories were discussed and a consensus was reached on each job. Also, the panel collapsed two categories into one and one category was eliminated because there was only one job and one person in that job in all nine hospitals. The final list comprised nine jobs (Table 3).

Appendix M shows a complete description of the objective tasks extracted from the job descriptions after they had been grouped into the final nine categories. Each participating employee was assigned the number of the job within these nine standard jobs that best described the duties of that worker. This procedure provided a base for analysis of all the research data.

Data Analysis

Scores Computed

JDS Scores. The JDS scores (Table 4) were computed as specified by Hackman and Oldham (117). Comparisons between systems and jobs were made

Table 3: Standard job categories

job	general objective task descriptions
1. cafeteria worker	variety of tasks associated with a cafeteria to include serving; cleaning; replenishing serving line and vending equipment; some simple food preparation.
2. cashier	collect cash; operate cash register; maintain records; requisition supplies; post daily menu; assist with other cafeteria tasks occasionally.
3. cook	operate all food preparation equipment; cook and serve a variety of menu items for patients and staff; requisition supplies; clean work area.
4. dietetic clerk	maintain patient dietary data; arrange menus; answer telephone; tally various patient related food data; assist dietitian, deliver and collect patient menus; type; occasionally assist with patient meal service activities.
5. general foodhandler	perform simple food preparation tasks such as toast bread, preparing salads, desserts, beverages, nourishment, and sandwiches; replenish serving lines; pre-prepare recipe ingredients; serve between meal nourishments; clean work area.
6. general kitchen worker	general labor tasks such as moving equipment and supplies; housekeeping to include sweeping, mopping, and trash removal; sorts, cleans, and stores dishware; assists with very simple food preparation.
7. patient tray attendant	distributes patient meals; performs a variety of tray assembly tasks; performs a variety of tasks relative to patient meals in ward pantry; clean-up following tray return from patients.

Table 3: (cont.)

job	general objective task descriptions
8. sanitation worker	wash and store dishware and pots and pans; do general cleaning of walls, floors, and equipment; remove trash from foodservice.
9. storeroom worker	order, receive and inspect vendor deliveries; place stock in storage; fill and deliver requisitions to using areas; conduct inventories; clean work area.

Table 4: Computation of JDS scores

score[1]	section	items
job dimensions		
skill variety	I	4
	II	1, 5*
task identity	I	3
	II	3*, 11
task significance	I	5
	II	8, 14*
autonomy	I	2
	II	9*, 13
job feedback	I	7
	II	4, 12*
feedback from agents	I	6
	II	7*, 10
dealing with others	I	1
	II	2, 6*
critical psychological states		
experienced meaningfulness	III	4*, 7
	V	3*, 6
experienced responsibility	III	1*, 8, 12, 15
	V	4, 7
knowledge of results	III	5, 11*
	V	5, 10*
affective responses		
general satisfaction	III	3, 9*, 13
	V	2, 8*
internal motivation	III	2, 6, 10, 14*
	V	1, 9

[1]Scores computed by averaging items comprising each score. Items starred (*) were reverse scored in computations.

Source: (117)

Table 4: (cont.)

score	section	items
specific satisfactions		
pay	IV	2, 9
security	IV	1, 11
social	IV	4, 7, 12
supervisory	IV	5, 8, 14
growth	IV	3, 6, 10, 13
individual growth need strength		
growth score I	VI	2, 3, 6, 8, 10, 11
growth score II	VII	1, 2*, 3*, 4*, 5, 6*, 7, 8*, 9* 10, 11, 12

using these scores. The effects of work content, work context, and individual worker differences were also investigated using these scores.

Two additional summary scores were computed, the Motivating Potential Score (MPS) and the Work Context Score (Table 5). The MPS was computed from the five core job dimension scores, skill variety, task identity, task significance, autonomy, and job feedback. The work context satisfaction score was computed as a summary of the JDS scores for four of the specific satisfaction scores as suggested by Oldham et al. (120).

Table 5: Motivating potential score (MPS) and work context computations

$$\text{motivating potential score (MPS)}^{1} = \left[\frac{\text{skill variety} + \text{task identity} + \text{task significance}}{3}\right] \times [\text{autonomy}] \times [\text{feedback}]$$

$$\text{work context score}^{2} = \text{pay satisfaction score} + \text{security satisfaction score} + \text{social satisfaction score} + \text{supervisory satisfaction score}$$

[1]Source: (117)

[2]Source: (120)

Work Outcome Measures. Supervisory ratings were scored on a five point scale (1, unsatisfactory to 5, superior) for each of the items that comprised the six performance dimensions listed in Table 6. Each of the performance scores was computed by averaging the scores for items comprising the respective performance dimension. The overall job performance score was computed by totaling the means for the six job performance scores.

Table 6: Work outcome measures

supervisory performance ratings	other measures
work quality	absenteeism
work quantity	tenure at the hospital
following directions	tenure in present job
initiative and judgment	tenure in foodservice
attendance	wage rate
personal relations	
overall job performance	

Absenteeism was defined as any occasion when the worker failed to report for duty when the absence was not planned in advance during the six month period immediately preceding data collection visits to the hospitals. Single long-term absences due to illness, accidents, or maternity leave were recorded as only one absence; in other words, absence was recorded by number of occasions not duration of absence.

Three measures of tenure were used for analysis: number of years employed in foodservice, at the institution, and in present job. Wage rate was a fourth work outcome measure. Wage rate was recorded as hourly wage.

Statistical Analysis

Reliability coefficients (133) were computed for each JDS score (Table 7) and each work performance scale (Table 8). The alpha-coefficients for the JDS scores ranged from .25 to .79. The performance score reliabilities ranged from .80 to .94.

Correlations between all JDS scores were computed. One way analysis of variance was used to study differences in scores by system and by jobs (133). Also, the combined effects of system and job were studied using

Table 7: Reliability coefficients for JDS scores

JDS scores	coefficient alpha
core job dimensions	
skill variety	.43
task identity	.35
task significance	.28
autonomy	.53
job feedback	.57
feedback from agents	.65
dealing with others	.25
critical psychological states	
experienced meaningfulness	.61
experienced responsibility	.62
knowledge of results	.54
affective responses	
general satisfaction	.73
internal work motivation	.64
pay satisfaction	.76
security satisfaction	.66
social satisfaction	.62
supervisory satisfaction	.78
growth satisfaction	.77
work context score	.70
growth need strength	
would like format	.79
job choice format	.57

Table 8: Reliability coefficients for work performance scores

work performance scores	coefficient alpha
supervisory ratings	
work quality	.92
work quantity	.90
following directions	.91
initiative and judgment	.87
attendance	.94
personal relations	.80
overall job performance	.91

the least squares analysis of variance for unequal subclasses (134). Supervisory ratings of the core job dimensions were computed and compared with employee ratings for the same dimensions. A t-test for independent samples was computed for this comparison (133).

For comparative purposes additional analyses were patterned after Baird's (118) study of stimulating and nonstimulating jobs and Oldham et al.'s (120) job enrichment study. Because of the complexity of the analysis, specific statistical techniques will be discussed along with the presentation of the data.

RESULTS AND DISCUSSION

Characteristics of the Sample

The sample characteristics are shown in Table 9 by type of system, conventional or technical. All persons were nonsupervisory foodservice workers in nonunionized hospital foodservices, employed in nine midwestern hospitals. The percentage of females and males was approximately the same for conventional and technical systems, with females outnumbering the males in both cases more than three to one. Over half the participants indicated they were twenty-nine years of age or less. A large majority of the sample (N = 168) had attended or completed high school. A larger percentage (84 per cent) of the technical group indicated they were employed full time, compared to the conventional group in which 67.3 per cent were full time.

Table 10 shows the distribution of the sample on the basis of employment and the total number of nonsupervisory employees in each of the nine foodservice organizations. An average of 42 per cent of all possible nonsupervisory employees participated in the research.

Distribution of the Jobs

The distribution of type of jobs in the sample group between the two types of systems is shown in Table 11. The standard job categories described in the methods section were used. There was a greater proportion of general kitchen workers in the conventional systems than in the highly technical systems; whereas, the ratio of patient tray attendants was greater in the more technical systems. Table 12 shows full-time and

Table 9: Characteristics of the sample

characteristic	type of system: conventional N	conventional %	technical N	technical %
sex				
male	36	21.4	23	23.0
female	132	78.6	77	77.0
age				
under 20	70	41.9	20	20.0
20-29	34	20.4	34	34.0
30-39	14	8.4	12	12.0
40-49	19	11.4	16	16.0
50-59	26	15.6	16	16.0
60 or over	4	2.4	2	2.0
highest education level				
grade school	9	5.7	4	4.1
some high school	52	32.9	22	22.7
high school	75	47.5	49	50.5
some college	17	10.8	17	17.5
college graduate	5	3.2	5	5.1
basis of employment				
full-time	113	67.3	84	84.0
part-time	55	32.7	16	16.0
size of community of residence				
big city (over 150,000)	129	76.8	74	74.7
medium city (25,000-150,000)	10	6.0	9	9.1
small city (2,500-25,000)	14	8.3	6	6.1
rural community (less than 2,500)	15	8.9	10	10.1
size of childhood community				
big city (over 150,000)	102	64.6	57	59.4
medium city (25,000-150,000)	11	7.0	9	9.4
small city (2,500-25,000)	14	8.9	9	9.4
rural community (less than 2,500)	31	19.6	21	21.9

Table 10: Nonsupervisory employees in hospitals in study

organization	sample		total nonsupervisory		
	full-time	part-time	full-time	part-time	total
conventional:					
1. Central Kansas Medical Center	20	-	26	17	43
2. Providence St. Margaret Health Center	12	13	44	36	80
3. North Kansas City Memorial Hospital	35	14	47	23	70
4. Menorah Medical Center	30	15	72	36	108
5. Lutheran Medical Center	16	13	32	29	61
technical:					
1. St. Joseph Hospital	27	10	43	35	78
2. St. Elizabeth Community Health Center	19	4	41	11	52
3. Immanuel Medical Center	15	-	37	23	60
4. Creighton Memorial-St. Joseph Hospital	23	2	83	35	118

Table 11: Distribution of jobs between type of systems

job category	type of system			
	conventional		highly technical	
	N	%	N	%
1. cafeteria worker	15	8.9	8	7.6
2. cashier	4	2.4	5	4.8
3. cook	26	15.5	12	11.4
4. dietetic clerk	11	6.6	10	9.5
5. general foodhandler	12	7.1	10	9.5
6. general kitchen worker	50	29.8	2	1.9
7. patient tray attendant	33	19.6	43	40.9
8. sanitation worker	14	8.3	10	9.5
9. storeroom worker	3	1.8	5	4.8
total	168	100.0	105	100.0

Table 12: Basis of employment by job

job	N	basis of employment	
		full-time (N=197)	part-time (N=71)
		%	%
1. cafeteria worker	22	72.7	27.3
2. cashier	9	88.9	11.1
3. cook	37	97.3	2.7
4. dietetic clerk	21	76.2	23.8
5. general foodhandler	21	95.2	4.8
6. general kitchen worker	52	53.8	46.2
7. patient tray attendant	74	62.2	37.8
8. sanitation worker	24	87.5	12.5
9. storeroom worker	8	75.0	25.0

part-time employment by job. The greatest proportion of full-time employment was in the cook job category (97.3 per cent); whereas, in the general kitchen worker group, full-time employees accounted for 53.8 per cent.

Tenure of Employees

Tenure by type of job is listed in Table 13. Tenure among the cooks was longer for all three employment length categories: at hospital, 4.7 years; in present job, 3.4 years; and in foodservice, 10.5 years. Patient tray attendants averaged the shortest tenure for each of the three employment length categories: at hospital, 2.0 years; in present job, 1.4 years; and in foodservice 3.0 years.

Table 13: Tenure by type of job

job category	length of employment in years		
	at hospital	in present job	in foodservice
	mean	mean	mean
1. cafeteria worker	2.9	2.7	6.6
2. cashier	3.7	2.6	4.2
3. cook	4.7	3.4	10.5
4. dietetic clerk	2.9	2.1	3.8
5. general foodhandler	3.8	2.2	7.2
6. general kitchen worker	2.2	2.0	3.1
7. patient tray attendant	2.0	1.4	3.0
8. sanitation worker	2.9	2.2	3.8
9. storeroom worker	4.3	2.0	4.5

Wage Rate

A one-way analysis of variance was used to compare the hourly wage rate among the nine standardized jobs (Table 14). With the exception of cashiers and storeroom workers, cooks had a significantly higher hourly wage than any of the other job groups, although the cooks' mean wage rate was higher than those two jobs as well. General kitchen worker was the only group with a mean hourly wage below $3.00.

Relationships Among Criterion Variables

Intercorrelations among the twenty Job Diagnostic Survey (JDS) scores are presented in Table 15. The correlation of the core job

Table 14: Wage rates by type of job

job category	hourly wage rate
	mean s.d.
1. cafeteria worker	$3.07 ± .41
2. cashier	3.46 ± .57
3. cook	3.75 ± .58
4. dietetic clerk	3.29 ± .36
5. general foodhandler	3.31 ± .53
6. general kitchen worker	2.99 ± .38
7. patient tray attendant	3.15 ± .36
8. sanitation worker	3.07 ± .41
9. storeroom worker	3.49 ± .55
all jobs	3.23 ± .49
F ratio	10.60***
differences among groups	6 vs 2, 3, 4, 5, 7, 8, 9 1 vs 2, 3 7 vs 2, 3, 9 8 vs 2, 3 3 vs 4, 5

*** $P \leq .001$

Table 15: Intercorrelations among JDS scale scores[1]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. skill variety																			
2. task identity	.09																		
3. task significance	.23	.14																	
4. autonomy	.27	.19	.06																
5. feedback from the job itself	.22	.23	.24	.32															
6. feedback from agents	.20	.13	.16	.24	.32														
7. dealing with others	.10	.01	.23	.02	.20	.15													
8. motivating potential score	.46	.39	.37	.77	.72	.35	.15												
9. experienced meaningfulness	.41	.19	.34	.27	.34	.31	.25	.43											
10. experienced responsibility	.25	.12	.30	.30	.27	.19	.12	.38	.34										
11. knowledge of results	-.01	.22	.19	.24	.40	.31	.12	.35	.32	.32									
12. general satisfaction	.31	.15	.27	.33	.25	.33	.14	.40	.59	.43	.28								
13. internal work motivation	.34	.20	.32	.27	.30	.20	.13	.41	.55	.58	.24	.45							
14. pay satisfaction	.19	.06	.13	.30	.19	.28	.03	.30	.37	.29	.12	.50	.26						
15. security satisfaction	.17	.11	.12	.40	.25	.28	.06	.40	.43	.47	.29	.51	.33	.44					
16. social satisfaction	.08	.15	.24	.22	.22	.19	.26	.30	.34	.39	.24	.38	.38	.27	.30				
17. supervisory satisfaction	.10	.03	.15	.30	.18	.35	.06	.30	.34	.36	.32	.46	.21	.39	.47	.38			
18. growth satisfaction	.44	.17	.30	.48	.35	.37	.14	.53	.61	.52	.25	.66	.50	.56	.57	.50	.50		
19. growth need strength ("would like" format)	-.09	.08	.05	-.09	.15	-.10	.12	.07	.01	.04	.06	-.05	.13	-.12	.02	.16	.11	-.05	
20. growth need strength (job choice format)	-.04	-.04	-.09	.08	.09	.00	-.02	.07	-.08	-.02	.05	-.11	-.11	-.10	.11	-.02	.05	-.12	.31

N = 270

[1] $P \leq .05 = r\ .10$
$P \leq .01 = r\ .14$

dimensions and motivating potential score (MPS) are similar to those found by Hackman and Oldham (117) across the 658 respondents in their study. For example, they reported a correlation of .80 between MPS and autonomy; in this study the correlation was .77 for the same relationship. On the MPS/feedback from the job itself relationship, Hackman and Oldham found a .72 correlation which was identical to the results from this study. Although the job dimensions themselves were moderately intercorrelated, Hackman and Oldham stated that this is to be expected if it is assumed that "good" jobs often are generally good and "bad" jobs are generally bad. They further contended that there is no a priori reason to expect that the job dimensions would or should be completely independent, and a moderate level of intercorrelation among them does not detract from their usefulness as separate job dimensions, as long as their non-independence is recognized and accounted for in interpreting the scores of jobs on a given job dimension.

Supervisory rating scores for worker performance and absentee data, as reported by the organization records, also were intercorrelated (Table 16). Intercorrelations of the six performance scores ranged from .44 to .80. The correlations between overall job performance and the other six performance scores were consistently high (.70 to .90), which was not surprising because the overall performance score was a summation of the six scores. Although the relationship between absenteeism and the performance measures were not strong, the direction of the relationship appears reasonable because absenteeism would be expected to decrease as levels of performance increase.

The correlations between work performance measures and affective responses to the job are presented in Table 17. Correlations between

Table 16: Intercorrelations among job performance scores and absenteeism[1]

measures	1. supervisory ratings a	b	c	d	e	f	g
1. supervisory ratings:							
a. quality of work							
b. quantity of work	.80						
c. following directions	.77	.76					
d. initiative and judgment	.74	.75	.72				
e. attendance	.54	.52	.62	.44			
f. personal relations	.65	.63	.73	.62	.52		
g. overall job performance	.90	.88	.91	.85	.70	.81	
2. absenteeism	-.05	-.04	-.05	.01	-.08	-.04	-.04

[1]All coefficients significant at or beyond .001 level except for correlations of performance ratings with absenteeism.

Table 17: Correlations between work performance measures and affective responses to job[1]

	affective responses						
			specific satisfactions				
performance measures	general satisfaction	internal work motivation	pay	security	social	supervisory	growth
supervisory ratings							
work quality	.21	.20	.08	.18	.22	.21	.13
work quantity	.18	.16	.07	.18	.18	.17	.14
following directions	.25	.22	.12	.23	.21	.23	.18
initiative and judgment	.15	.12	.05	.17	.11	.18	.11
attendance	.32	.20	.23	.27	.15	.20	.29
personal relations	.18	.11	.04	.14	.17	.22	.10
overall job performance	.26	.20	.12	.24	.20	.24	.20
absenteeism	-.02	.04	-.12	.01	.04	-.03	.00

N = 264

[1] $P \leq .05 = r\ .10$
$P \leq .01 = r\ .14$
$P \leq .001 = r\ .18$

supervisory ratings and affective response scores relationships all were relatively low but in a positive direction. The absenteeism/affective response measures correlation coefficients suggest that there is little or no relationship between absenteeism and work related satisfaction, either with job content or job contextual factors for the total group of foodservice employees from the two types of systems and the various jobs. As Schwab and Cummings (66) have concluded, there may be a large number of covariates that moderate the satisfaction-performance relationship. For this group of hospital foodservice workers, there may be other variables that influence work performance and attendance more than job related satisfaction.

Analysis of Data by Type of System

The JDS scale scores by type of system were compared using a one-way analysis of variance (Table 18). The mean scores for each of the core job dimensions and motivating potential would be considered moderate, according to Hackman et al. (116). On a scale of one to seven, core job dimensions having a value of six or above would be high; a moderate range falls between three and six; and low core dimension scores are below three. The motivating potential score ranges from one to 360; an average score is 125. An MPS of 260 was considered by Hackman et al. to be very high, whereas thirty was very low.

No significant differences were found between the conventional and technical systems on the basis of the core job dimensions. The employees surveyed in the conventional systems did not perceive the characteristics of their jobs to be significantly different from the employees in the technical systems. In the technical systems, however, the mean scores

Table 18: JDS scale scores by type of system

score	system: conventional mean ± s.d.	system: technical mean ± s.d.	F ratio
core job dimensions			
skill variety	3.51 ± 1.40	3.67 ± 1.40	.83
task identity	4.95 ± 1.25	4.77 ± 1.20	1.26
task significance	5.44 ± 1.10	5.62 ± 1.16	1.58
autonomy	4.31 ± 1.48	4.56 ± 1.25	1.98
job feedback	4.67 ± 1.38	4.80 ± 1.16	.59
feedback from agents	3.98 ± 1.62	4.22 ± 1.48	1.53
dealing with others	5.31 ± 1.12	5.47 ± 1.14	1.36
MPS	100.43 ± 59.22	105.91 ± 54.99	.57
critical psychological states			
experienced meaningfulness	4.66 ± 1.18	5.11 ± 1.06	10.02**
experienced responsibility	5.09 ± 1.05	5.56 ± .86	14.82***
knowledge of results	4.93 ± 1.00	5.05 ± 1.16	.81
affective responses to job			
general satisfaction	4.26 ± 1.30	4.47 ± 1.24	1.83
internal work motivation	5.06 ± 1.06	5.33 ± .85	4.89*
specific satisfactions			
pay	4.03 ± 1.79	3.97 ± 1.51	.10
job security	4.41 ± 1.54	4.74 ± 1.49	2.91
social	5.49 ± 1.01	5.62 ± 1.03	1.13
supervisory	4.85 ± 1.53	5.16 ± 1.42	2.70
growth	4.52 ± 1.35	4.74 ± 1.13	2.01
growth need strength			
"would like" format	5.02 ± 1.28	4.89 ± 1.31	.67
job choice format	2.82 ± .50	2.89 ± .52	1.08

* $P \leq .05$
** $P \leq .01$
*** $P \leq .001$

for the core job dimensions and motivating potential were all slightly higher except for the task identity score.

All three critical psychological state scores were higher in the technical systems. Experienced meaningfulness and experienced responsibility scores were both significantly higher for employees in the technical systems. Experienced meaningfulness is a function of the core job dimensions, skill variety, task identity, and task significance.

Experienced responsibility is a direct result of autonomy. The critical psychological state, knowledge of results for work activities, is derived from the core dimension, feedback. According to the job characteristics theory of Hackman et al. (116), the degree to which the critical psychological states are experienced by workers, a corresponding degree of positive personal and work outcomes should be observable. Therefore, for this sample of hospital foodservice employees the critical psychological state scores should be followed by higher positive personal and work outcomes for the members of the technical systems.

The affective response scores are measures of the personal outcomes from the jobs studied. As Table 18 shows, the mean scores for the seven affective responses were all higher in the technical systems except for satisfaction with pay which was slightly lower in the technical systems. The only significant difference between results from the two systems for affective response scores was for internal work motivation, which was significantly higher in the technical systems. The data from Table 18 generally favor the technical systems on the basis of the core job dimensions, critical psychological states, and affective responses to the job. Additionally, there are some significant differences between the two types of systems and the difference favored the technical systems.

The implication is that the technical system jobs were designed to generate more positive personal outcomes on the part of the employees in those systems.

Kast and Rosenzweig (18) considered other possible positive effects of new higher technology on the psychosocial subsystem of an organization. Technology often affects roles and status positions of people in organizations. Many of the foodservice employees in this study at the technical hospitals had previously worked in conventional systems. The technical systems involved were all formerly conventional systems and, even though the technical systems were initiated in new buildings, many of the veteran employees stayed with the organization. But, whether the workers were veterans to the organization or not, there does exist the possibility that identification with the "new" technical system and any prestige that may be associated with it may have had an overall positive effect on the personal outcomes for the system members.

Growth need strength scores are an indication of an individual employee's need for personal accomplishment, for learning and self-development beyond where he/she is now, and for being challenged and stimulated on the job. There were no significant differences between the workers in the conventional and technical systems for growth need strength mean scores.

Analysis of Data by Type of Job

Core Job Dimension Scores by Type of Job

A one-way analysis of variance (ANOVA) revealed some differences among the core job dimension scores among the nine standardized job categories, without regard for system (Table 19). Significant differences

Table 19: Core job dimension scores by type of job

type of job	skill variety	task identity	task signifi-cance	autonomy	job feedback	feedback from agents	dealing with others	MPS[1]
	mean s.d.	mean s.d.	mean s.d.	mean s.d.	mean s.d.	mean s.d.	mean s.d.	mean s.d.
1. cafeteria worker	3.40 ±1.60	4.70 ± .88	5.39 ±1.17	4.09 ±1.68	4.64 ±1.15	4.54 ±1.58	5.10 ±1.09	91.18 ±57.74
2. cashier	3.88 ±1.04	5.42 ±1.44	5.46 ±1.45	5.17 ±1.43	5.17 ±1.41	4.33 ±1.25	5.83 ± .69	138.50 ±74.77
3. cook	4.46 ±1.23	5.46 ± .98	5.59 ±1.01	4.62 ±1.72	5.02 ±1.13	4.26 ±1.64	5.27 ±1.29	124.88 ±67.14
4. dietetic clerk	3.92 ±1.48	4.56 ±1.57	6.08 ±1.08	4.43 ±1.51	4.95 ±1.52	4.06 ±1.55	5.97 ± .96	116.82 ±71.03
5. general foodhandler	3.33 ±1.41	5.43 ±1.16	5.38 ±1.16	4.27 ±1.38	4.80 ±1.21	4.00 ±1.63	5.05 ±1.60	98.05 ±52.78
6. general kitchen worker	3.14 ± .99	4.50 ±1.22	5.22 ±1.03	4.27 ±1.24	4.53 ±1.34	3.96 ±1.61	5.13 ±1.00	88.04 ±45.36
7. patient tray attendant	3.39 ±1.48	4.93 ±1.24	5.69 ±1.15	4.34 ±1.27	4.56 ±1.36	4.06 ±1.55	5.59 ±1.01	98.41 ±56.04

[1]MPS = Motivating potential score

Table 19: (cont.)

type of job	skill variety	task identity	task signifi-cance	autonomy	job feedback	feedback from agents	dealing with others	MPS
	mean s.d.	mean s.d.	mean s.d.	mean s.d.	mean s.d.	mean s.d.	mean s.d.	mean s.d.
8. sanitation worker	3.53 ±1.56	4.32 ±1.07	5.17 ±1.02	4.44 ±1.14	4.64 ±1.22	3.75 ±1.43	5.24 ±1.05	91.05 ±41.97
9. storeroom worker	3.75 ± .92	5.25 ±1.00	5.50 ±1.50	5.33 ±1.15	5.33 ±1.26	3.50 ±1.85	5.33 ±1.15	137.33 ±48.80
F ratio	3.25**	3.61***	1.75	1.12	.98	.64	2.05*	2.42*
differences among groups	1 vs 3, 7, 8 3 vs 5, 6 4 vs 6	1 vs 3, 5 2 vs 6, 8 3 vs 4, 6, 7, 8 5 vs 6, 8 6 vs 8					4 vs 1, 3, 5, 6, 8	1 vs 2, 3, 9 2 vs 8 3 vs 8 4 vs 6 8 vs 9

* $P \leq .05$
** $P \leq .01$
*** $P \leq .001$

were found in the skill variety, task identity, and dealing with others' scores, as well as the MPS measure.

The mean skill variety score for cooks (4.46) was higher than that of all the other jobs and was significantly higher than that of cafeteria worker (3.40), general food handler (3.33), and general kitchen worker (3.14). Cooks perceived their jobs as having more skill variety than did the other job incumbents. Considering the objective tasks performed by the cooks, these data might be expected because of the variety of skills needed by a cook in preparing the variety of items included on a hospital menu.

The dietetic clerks had the second highest skill variety score, which might be expected since this job usually involves an array of tasks concerned with patient tray service, communication with personnel in patient care areas, and maintaining patient diet orders and records. The general kitchen worker's mean score was lowest, reflecting the routine, repetitive nature of the job.

The mean task identity score for cooks (5.46) was higher than all eight other job groups and was significantly higher than that of cafeteria worker (4.70), dietetic clerk (4.56), general kitchen worker (4.50), patient tray attendant (4.93), and sanitation worker (4.32). Task identity is the degree to which the job requires completion of a whole and identifiable piece of work. Hackman et al. (116) observed the close relationship of task identity and skill variety as exemplified by a worker assembling a whole toaster, versus attaching only the plug. For the cook group in this study, it is interesting that cooks experience more task identity than the other groups, results that are compatible with skill variety data. The job descriptions for the nine job categories

indicate that a cook would be more likely to assemble or produce a whole product (either a menu item or a whole meal) as opposed to a general food handler who might only dice, chop, or peel vegetables.

Cashiers, general food handlers, and storeroom workers also had high task identity scores. The nature of the cashier and storeroom jobs would suggest they complete a "whole task," such as receiving cafeteria revenues and accounting for them or receiving and storing food and supply deliveries. Also, apparently the relatively simple food production performed by the food handlers involves completion of a whole task.

Dietetic clerks experienced a higher degree of dealing with others on their jobs than did those in the other job types. The difference between the dietetic clerks' mean score (5.97) for dealing with others was significantly higher than those of cafeteria workers (5.10), cooks (5.27), general food handlers (5.05), general kitchen workers (5.13), and sanitation workers (5.24). Dietetic clerks for this study were involved routinely in receiving information from patient care units and transmitting information to the food production and service units. Such activity required routine and frequent personal contact with other people within the hospital. Dealing with others is, therefore, a likely job characteristic to be experienced by dietetic clerks. A cook, on the other hand, may rarely see or deal with others if he/she spends most of the work time engaged in food preparation tasks.

Through their contacts with cafeteria customers the cafeteria workers might be expected to perceive their jobs higher than they reported, at least on a comparable level with dietetic clerks since both groups meet and deal with others as part of their job. Although this may be true, the type of dealings in which dietetic clerks engage require

more complex and involved communication than that of a cafeteria worker. The dietetic clerk may participate in a lengthy discussion with a nurse concerning a patient's diet; whereas a cafeteria worker may only solicit that same nurse's menu choice as he/she selects menu items from the cafeteria service line.

High and Low MPS Jobs. There were a number of significant differences between the job groups on the basis of motivating potential score. The mean MPS's for cashier, cook, dietetic clerk, and storeroom worker were all above 100, whereas the mean MPS's for cafeteria worker, general food handler, general kitchen worker, patient tray attendant, and sanitation worker were all below 100. Therefore, those jobs with a mean MPS over 100 were grouped together into a high MPS job group and those below 100, into a low MPS job group. Figure 8 diagrammatically presents the mean core job dimension scores for each of the jobs in the high MPS group: cashier, cook, dietetic clerk, and storeroom worker. Figure 9 shows the mean core job dimension scores for the low MPS jobs: cafeteria worker, general food handler, general kitchen worker, patient tray attendant, and sanitation worker. Comparing these two figures, the scores almost all appear to be directionally the same. From dimension to dimension the score values tend to vary proportionately. The high MPS jobs generally were scored higher on all job dimensions than the low MPS jobs. The exception is the task identity score for dietetic clerks. For all jobs except sanitation worker and general kitchen worker, the dietetic clerks appear to see their jobs as not producing whole identifiable products or results. Although the dietetic clerks may deal more with others, it appears that those interactions do not result in tangible work

Fig. 8. Core job dimension scores for jobs in high MPS group.

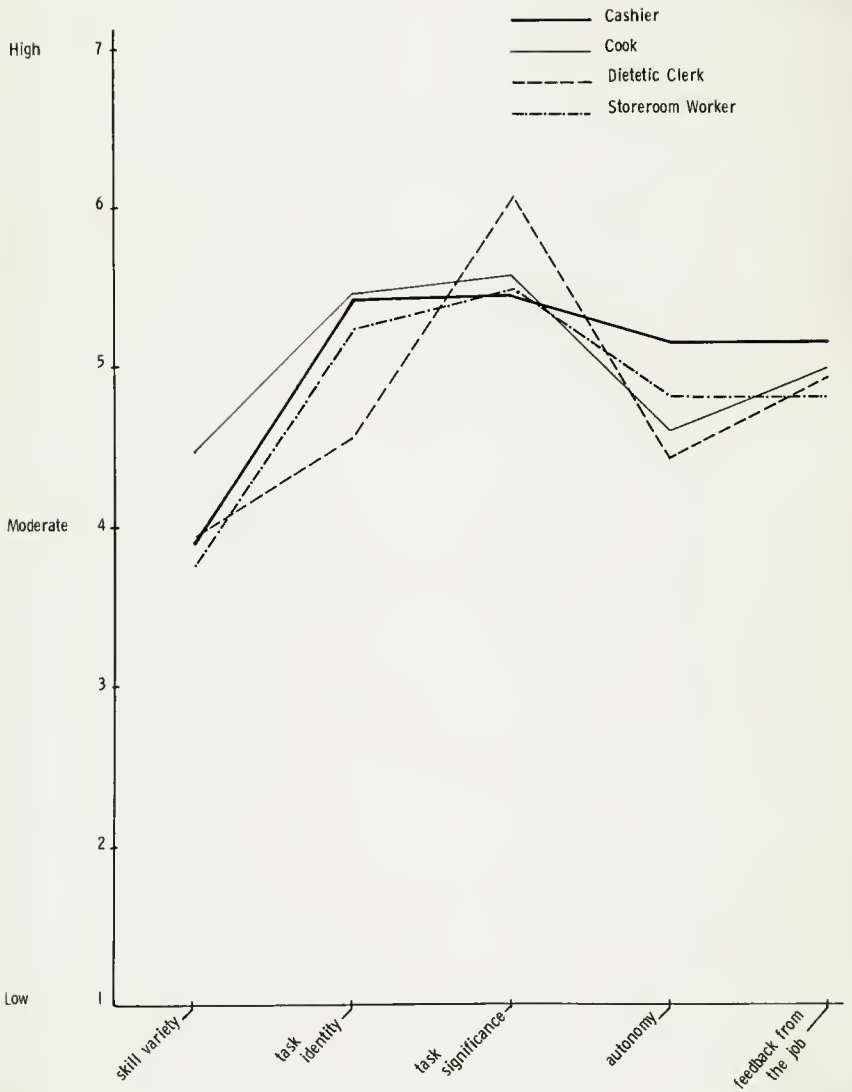
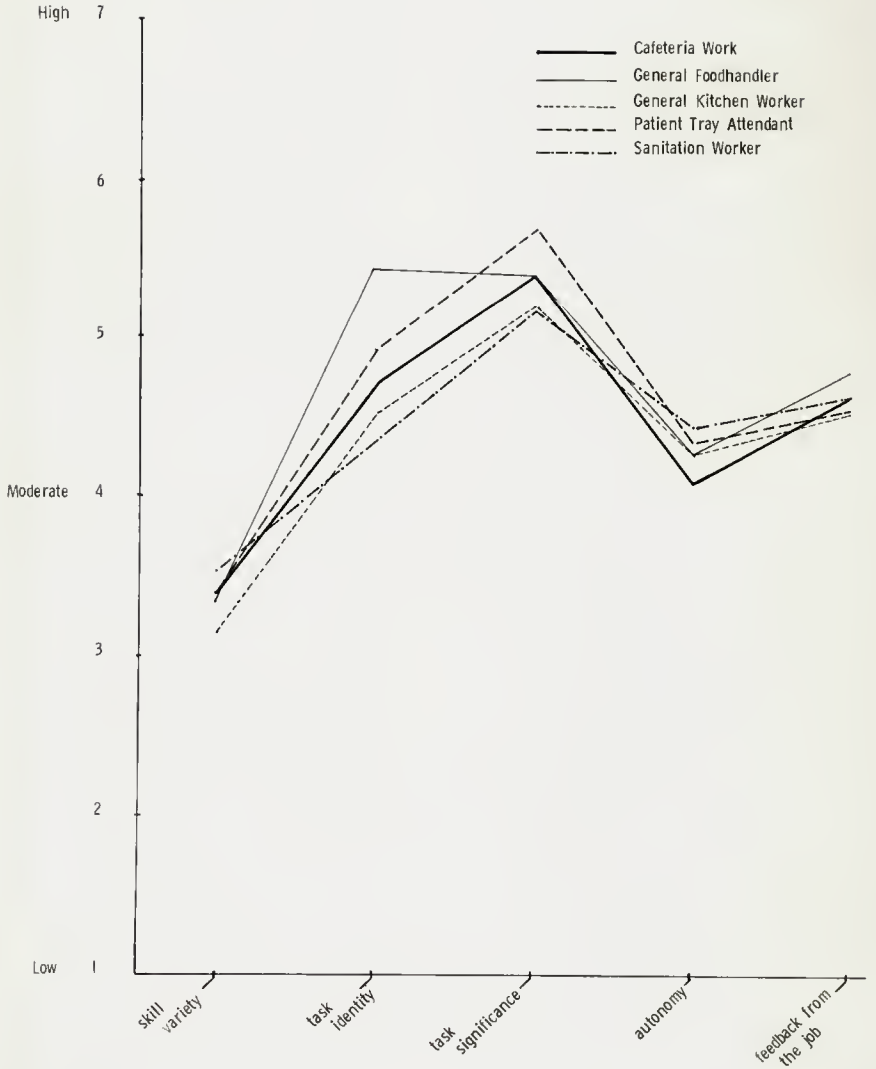

Cashier
Cook
Dietetic Clerk
Storeroom Worker
High
Moderate
Low
7
6
5
4
3
2
1
skill variety
task identity
task significance
autonomy
feedback from the job

Fig. 9. Core job dimension scores for jobs in low MPS group


High
7
6
5
Moderate
4
3
2
Low
1
Cafeteria Work
General Foodhandler
General Kitchen Worker
Patient Tray Attendant
Sanitation Worker
skill variety
task identity
task significance
autonomy
feedback from the job

outcomes, as much as a task such as prepreparing vegetables may for the general food handlers.

Figure 10 shows the overall mean score for the low MPS group (93.35) compared to that of the high MPS group (129.38). This difference between the two groups of jobs lead the researchers to investigate the difference between the groups on the basis of other dependent variables such as performance ratings and other variables related to the job characteristics theory. The hypothesis based on Hackman et al. (116) research is that the personal and work outcomes should be higher for the high MPS job incumbents versus those in the low MPS jobs.

Supervisory and Employee Ratings of Core Job Dimensions. Supervisory rating scores for the core job dimensions were compared to the employee ratings of those same dimensions. Table 20 shows only the dimensions with significant differences in the ratings between supervisors and job incumbents for the high MPS jobs. Table 21 shows significant differences between supervisors and job incumbents for the low MPS jobs. More differences were found in low MPS than in high MPS jobs. In every case, the supervisors rated the job dimensions higher than did the employees. Hackman and Oldham (117) found similar results. They suggested, however, that the employee is probably the best judge of his/her job.

Feedback from agents was the one job characteristic that was rated significantly higher by the supervisors for all jobs studied except cashier. Perhaps the employees were not receiving as much feedback from agents (either supervisors, customers, or co-workers) as their supervisors believe they were; or, perhaps the workers expected more feedback from others than they were getting, whereas supervisors believed feedback was

Fig. 10. Motivating potential score for high and low MPS jobs

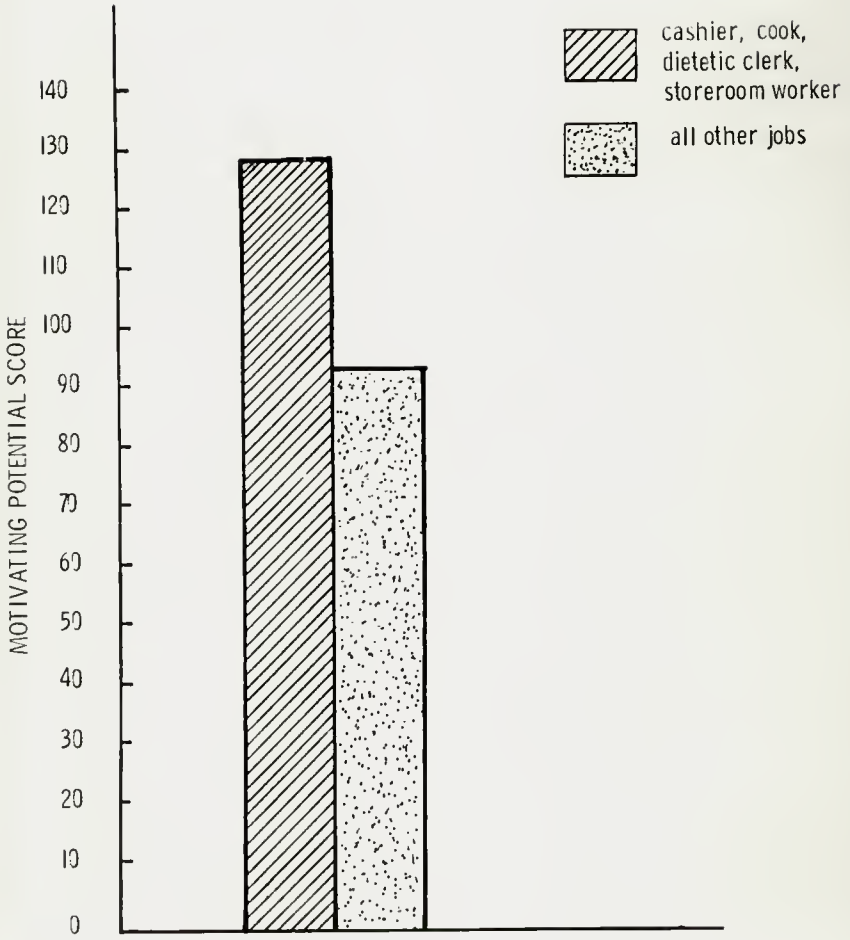

MOTIVATING POTENTIAL SCORE
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
cashier, cook, dietetic clerk, storeroom worker
all other jobs

Table 20: Significant differences in employee and supervisory ratings of core job dimensions for high MPS jobs[1]

job category core job dimensions dimensions	employee rating		supervisory rating		t value
	mean	s.d.	mean	s.d.	
cook					
skill variety	4.46	± 1.23	5.39	± 1.00	3.05**
task significance	5.59	± 1.01	6.58	± .74	4.19***
feedback from agents	4.26	± 1.64	5.98	± .81	5.27***
dietetic clerk					
feedback from agents	4.06	± 1.55	5.52	± .95	3.28**
storeroom worker					
feedback from agents	3.48	± 2.00	5.94	± 1.00	2.88*

[1]Data presented if ratings of employees and supervisors were significantly different. Data used in analysis only if both employee and supervisory ratings were available.

* $P \leq .05$
** $P \leq .01$
*** $P \leq .001$

Table 21: Significant differences in employee and supervisory ratings of core dimensions for low MPS jobs[1]

job category core job dimensions dimensions	employee rating		supervisory rating		t value
	mean	s.d.	mean	s.d.	
general foodhandler					
skill variety	3.33 ±	1.41	4.56 ±	1.42	2.44*
feedback from agents	4.00 ±	1.63	5.90 ±	1.17	3.90***
MPS	98.05 ±	52.78	144.68 ±	63.93	2.19*
general kitchen worker					
skill variety	3.09 ±	.97	5.61 ±	2.05	4.88***
task identity	4.51 ±	1.24	6.53 ±	.76	7.91***
task significance	5.22 ±	1.05	6.63 ±	1.24	4.21***
job feedback	4.51 ±	1.36	6.04 ±	.54	6.65***
feedback from agents	3.94 ±	1.62	5.37 ±	.73	4.95***
dealing with others	5.14 ±	1.02	6.31 ±	1.19	3.65***
MPS	86.96 ±	45.69	154.04 ±	38.27	5.93***
patient tray attendant					
task significance	5.69 ±	1.15	6.67 ±	.47	4.72***
feedback from agents	4.06 ±	1.55	5.81 ±	.93	4.89***
sanitation worker					
task identity	4.32 ±	1.04	5.88 ±	1.25	3.58**
task significance	5.17 ±	1.02	6.52 ±	.89	3.98***
job feedback	4.64 ±	1.22	5.67 ±	1.26	2.27*
feedback from agents	3.75 ±	1.43	5.52 ±	1.33	3.56**
MPS	91.05 ±	41.97	142.10 ±	51.76	2.87*

[1]Data presented if ratings of employees and supervisors were significantly different. Data used in analysis only if both employee and supervisory ratings were available.

* $P \leq .05$
** $P \leq .01$
*** $P \leq .001$

adequate. Cashiers have regular and frequent direct contact with customers; therefore, it is not surprising that both the cashiers and supervisors perceived a high degree of feedback. The job descriptions of cashiers specify that the cashier receive comments and complaints from customers.

Critical Psychological State and Affective Response Scores by Type of Job

Table 22 lists the critical psychological state scores by job. A one-way analysis of variance showed mean experienced responsibility score (5.83) for cashiers was significantly higher than those of the cafeteria worker (4.95), general kitchen worker (4.95), and sanitation worker (5.06). The job characteristic theory (116) proposed that the core job dimension, autonomy contributes to experienced responsibility for the work outcomes. The mean autonomy score (5.17) for cashiers was not significantly different from all the other jobs but it was higher than all except storeroom workers (5.33). There appears to be support for the theory in the cashier's autonomy/experienced responsibility data. Also, the low scores for the three positions, cafeteria, kitchen, and sanitation workers is not unexpected, since these jobs all involve assisting other personnel.

The personal outcomes of jobs are the affective responses to work, including internal work motivation, general satisfaction, and satisfaction with the contextual factors. Table 23 presents the results of a one-way analysis of variance by job for the affective responses. Although there were some significant differences between job groups on the basis of the core job dimensions and critical psychological state

Table 22: Critical psychological state scores by type of job

type of job	experienced meaningfulness	experienced responsibility	knowledge of results
	mean s.d.	mean s.d.	mean s.d.
1. cafeteria worker	4.55 ±1.11	4.95 ±1.02	5.14 ± .95
2. cashier	5.53 ±1.51	5.83 ± .76	5.39 ±1.39
3. cook	5.16 ±1.16	5.46 ±1.03	5.00 ±1.05
4. dietetic clerk	4.94 ±1.43	5.54 ± .76	5.36 ± .82
5. general foodhandler	4.80 ±1.04	5.54 ± .77	5.06 ± .90
6. general kitchen worker	4.48 ±1.13	4.95 ±1.13	4.74 ± .95
7. patient tray attendant	4.90 ±1.09	5.29 ± .98	4.96 ±1.20
8. sanitation worker	4.77 ± .98	5.06 ±1.00	5.03 ±1.07
9. storeroom worker	5.00 ±1.12	5.65 ± .84	4.32 ±1.13
F ratio	1.68	2.19*	1.27
differences among groups		1 vs 2 2 vs 6, 8	

* $P \leq .05$

Table 23: Affective responses by type of job

type of job	internal work motivation	general satisfaction	specific satisfactions with work scores				
			pay	security	social	supervisory	growth
	mean s.d.	mean s.d.	mean s.d.	mean s.d.	mean s.d.	mean s.d.	mean s.d.
1. cafeteria worker	5.12 ±1.13	4.35 ±1.17	3.80 ±1.69	4.30 ±1.81	5.51 ± .82	5.12 ±1.69	4.23 ±1.49
2. cashier	5.31 ±1.07	4.89 ±1.53	4.56 ±2.07	4.67 ±1.87	6.07 ± .86	5.41 ±2.03	5.24 ±1.13
3. cook	5.54 ± .82	4.64 ±1.27	4.11 ±1.59	4.70 ±1.42	5.43 ± .82	4.41 ±1.38	4.76 ±1.29
4. dietetic clerk	4.83 ±1.26	4.39 ±1.55	3.38 ±1.77	4.78 ±1.57	5.44 ±1.12	5.57 ±1.53	4.45 ±1.70
5. general foodhandler	5.27 ± .70	4.23 ± .96	4.40 ±1.68	4.71 ±1.32	5.30 ±1.23	4.48 ±1.87	4.63 ±1.17
6. general kitchen worker	5.01 ± .90	4.23 ±1.27	4.44 ±1.72	4.38 ±1.58	5.45 ±1.10	4.87 ±1.42	4.43 ±1.38
7. patient tray attendant	5.25 ±1.03	4.23 ±1.27	3.76 ±1.63	4.38 ±1.56	5.79 ± .91	5.12 ±1.35	4.60 ±1.06
8. sanitation worker	4.81 ± .99	4.23 ±1.42	4.02 ±1.64	5.00 ±1.29	5.22 ±1.23	5.00 ±1.21	4.78 ±1.12
9. storeroom worker	5.16 ± .99	4.46 ±1.35	3.75 ±1.79	4.44 ±1.43	5.54 ±1.11	5.50 ±1.40	5.09 ±1.39
F ratio[1]	1.68	.62	1.34	.68	1.45	1.80	.95

[1]All F values nonsignificant.

scores, there were no significant differences between the nine job groups on the basis of affective response scores.

Hackman and Lawler (9) concluded their study of employee reactions to job characteristics with the suggestion that there is no single best way to design a job. They also proposed that the motivational potential of jobs can be realized only when the psychological demands and opportunities of jobs mesh well with the personal needs and goals of employees who work on them. Fitting jobs to people and people to jobs simultaneously may have the greatest potential for motivating and satisfying employees. For this sample of hospital foodservice workers, job characteristics or job design may have little or no relationship to meeting their needs, because these employees may be working to satisfy lower order needs and are not seeking challenge, growth, or recognition in their work. Lawler and Hall (109) reported similar results with scientists. They found that satisfaction proved to be related to such job characteristics as the amount of control the job allowed the holder and the degree to which it was seen to be relevant to the holder's valued abilities.

Growth Need Strength by Job. A one-way analysis of variance was used to compare the growth need strength scores for all nine jobs (Table 24). Dietetic clerks indicated that they had significantly higher growth needs than the other participants in this study. Even though growth need strength is an individual difference, work of the dietetic clerk may be designed to challenge the job incumbents and thus kindle growth need, as suggested by Hackman et al. (116).

Table 24: Growth need strength scores by type of job

type of job	"would like" format	job choice format
	mean s.d.	mean s.d.
1. cafeteria worker	4.94 ± 1.60	2.94 ± .51
2. cashier	5.37 ± 1.07	2.67 ± .44
3. cook	5.06 ± 1.25	2.95 ± .49
4. dietetic clerk	5.51 ± 1.12	3.17 ± .68
5. general foodhandler	4.60 ± 1.47	2.60 ± .55
6. general kitchen worker	5.03 ± 1.15	2.75 ± .46
7. patient tray attendant	4.87 ± 1.37	2.80 ± .46
8. sanitation worker	4.65 ± 1.18	2.90 ± .46
9. storeroom worker	5.31 ± .89	2.99 ± .48
F ratio	1.11	2.61**
differences among groups	4 vs 5, 7, 8	4 vs 2, 5, 6, 7

** $P \leq .01$

Work Performance by Job. Supervisory ratings and absentee data were compared by job group (Table 25). Sanitation worker performance was rated lowest by the supervisors on every performance measure.

Also, the mean score for each performance rating appears to progress upward in value as the job categories increase in skill level and degree of responsibility associated with the job. For example, if sanitation worker is a job requiring little skill and responsibility versus cook, which requires much skill and more responsibility in terms of food production and using a variety of sophisticated equipment, there may be a "halo" type effect associated with the performance ratings of the supervisors.

Table 25: Work performance by type of job

Job category	supervisory ratings: work quality	work quantity	following directions	initiative and judgment	attendance	personal relations	overall job performance	absenteeism
	mean s.d.	mean s.d.	mean s.d.	mean s.d.	mean s.d.	mean s.d.	mean s.d.	mean s.d.
1. cafeteria worker	3.32 ± .85	3.44 ± .82	3.40 ± .83	3.32 ± .75	3.83 ± .89	3.38 ± .74	20.70 ±4.20	3.39 ±4.80
2. cashier	3.72 ± .70	3.79 ± .67	3.75 ± .67	3.63 ± .81	4.38 ± .74	3.96 ± .63	23.22 ±3.68	1.00 ±1.50
3. cook	3.46 ± .89	3.62 ± .76	3.55 ± .63	3.43 ± .98	3.95 ±1.00	3.57 ± .82	21.58 ±4.06	2.78 ±3.71
4. dietetic clerk	3.62 ± .92	3.59 ± .71	3.75 ± .94	3.62 ± .72	4.02 ± .84	4.00 ± .68	22.60 ±4.14	1.37 ±1.80
5. general foodhandler	3.27 ± .75	3.16 ± .62	3.36 ± .64	3.24 ± .71	3.80 ±1.02	3.39 ± .80	19.99 ±3.41	2.16 ±4.57
6. general kitchen worker	3.08 ± .68	3.10 ± .61	3.20 ± .63	3.01 ± .83	3.48 ± .99	3.33 ± .67	19.21 ±3.70	2.16 ±3.00
7. patient tray attendant	3.32 ± .75	3.20 ± .72	3.26 ± .56	3.11 ± .74	3.39 ± .94	3.48 ± .67	19.74 ±3.68	2.85 ±7.19
8. sanitation worker	2.77 ± .71	2.93 ± .66	2.80 ± .54	2.71 ± .55	3.17 ±1.19	3.03 ± .56	17.41 ±3.16	2.52 ±3.46
9. storeroom worker	3.31 ± .73	3.58 ± .90	3.78 ± .80	3.67 ± .78	4.44 ± .82	3.79 ± .56	22.57 ±4.20	2.33 ±3.63
F ratio	2.80**	3.79***	4.75***	3.55***	3.82***	3.81***	4.97***	.42
differences among groups	8 vs 2,3,4	8 vs 2,3	8 vs 2,3,4,6, 7,9 6 vs 2,3,4,9 7 vs 2,3,4,9	8 vs 2,3,4,9	8 vs 2,3,4,9	8 vs 2,4,9 6 vs 2,4,9	8 vs 2,3,4,7, 9 7 vs 2,3,4,9 6 vs 2,3,4,9	

** $P \leq .01$
*** $P \leq .001$

Mean work quality score for sanitation worker (2.77) was significantly lower than the mean work quality score for cook (3.62). The work quality for sanitation worker may be lower than that of cook or it may be that the supervisors tend to perceive higher work quality from cooks than from sanitation workers. However, the higher skill level jobs require that more skilled individuals be employed or trained, and a higher level performance would be expected. Also, these jobs would provide more challenge and therefore, would probably lead to higher performance. The data (Table 25) for each supervisory performance rating follow a similar pattern as that cited for work quality.

The only work outcome measure that showed no significant difference was that of absenteeism. There may be no implications to this finding because the absentee data collected may not be a valid work performance indicator. Staw and Oldham (137) suggested that absenteeism may have positive as well as negative consequences. Some employees may report to work in order to obtain a monetary or some other extrinsic reward even though that employee finds the work incompatible to his/her needs. The employee's performance may be minimal in such a situation. Conversely, absence from duty may serve a psychological maintenance function for the employee who finds the work incompatible with his/her needs, thus performance may be sustained as a result of the self-imposed "vacation." For the hospital foodservice personnel involved in this study, there may be no significant difference between groups on the basis of absenteeism.

Steers and Rhodes (138) reviewed 104 employee attendance studies and concluded that a multiplicity of variables influence employee motivation and ability to come to work. They viewed the data systematically suggesting that attendance behavior is a psychological process influenced by

the job situation, employee values and expectations, personal characteristics, satisfaction with the job situation, pressure to attend, ability to attend, and attendance motivation. More specifically, Steers and Rhodes found support for numerous multivariates influencing attendance such as job scope, job level, role stress, work group size, leader style, co-worker relations, advancement opportunities, education, tenure, age, sex, family size, illness, accidents, family responsibilities, transportation problems, economic conditions, incentive/reward systems, work group norms, personal work ethic, and organizational commitment.

Many, if not all, the variables identified by Steers and Rhodes (138) may have influenced the attendance behavior of this sample of foodservice workers. The characteristics of this sample (Table 9) indicate females outnumber males 3 to 1. The ages of these employees are predominantly in the family bearing range. Female gender and family responsibilities may have an influence on some of these employee's ability to attend. Education level may be influencing job opportunities for this group. Over 75 per cent of the employees had a high school degree or less. Regardless of the job or satisfaction experienced by the worker, his/her attendance may be high or low because the worker has limited job opportunities and may attend work to maintain job security. Therefore, the implication that the more enriched jobs (cook, cashier, dietetic clerk and storeroom worker) should lead to better attendance may not be evident because a variety of other personal as well as situational influences operating within the environment of these foodservice employees.

JDS Scale Scores by High and Low MPS Jobs

The initial analysis of JDS scale scores by job suggested that the cashiers, cooks, dietetic clerks, and storeroom workers perceived their jobs to have higher motivating potential than did the respondents in the five other jobs. A t-test for independent samples was used to compare the high and low MPS groups by all twenty JDS variables (Table 26). The mean skill variety, task identity, autonomy, job feedback, and motivating potential scores were all significantly higher in the high MPS jobs. Figure 11 illustrates the difference between the high and low MPS groups for the core job dimensions.

Critical psychological states differences were also significant between the high and low MPS job groups (Figure 12). The high MPS group reported they experienced more meaningfulness in the work and had more responsibility for the outcomes of the work they performed. According to Hackman et al. (116) skill variety, task identity, and task significance should lead to experienced meaningfulness of the work; autonomy should lead to experienced responsibility for outcomes of the work; and feedback should lead to knowledge of actual results of the work activities. The data for the high and low MPS groups for this study tend to support the job characteristics theory because the high MPS group psychological state score differences correspond to the differences between high and low MPS groups for the core job dimensions. Except for knowledge of results, the critical psychological state mean scores are significantly higher for the high MPS jobs. The implication may be that as the jobs in these hospital foodservices are designed to include a higher degree of the core job dimensions, the incumbents will also experience a higher degree of the critical psychological states.

Table 26: JDS scale scores by high and low MPS jobs

score	MPS jobs: high (N=74) mean	s.d.	MPS jobs: low (N=193) mean	s.d.	t value
core job dimensions					
skill variety	4.17 ±	1.28	3.34 ±	1.38	4.71***
task identity	5.18 ±	1.26	4.76 ±	1.20	2.46*
task significance	5.70 ±	1.14	5.43 ±	1.12	1.75
autonomy	4.70 ±	1.58	4.29 ±	1.30	1.98*
job feedback	5.05 ±	1.27	4.60 ±	1.29	2.60**
feedback from agents	4.13 ±	1.59	4.05 ±	1.56	.39
dealing with others	5.53 ±	1.17	5.31 ±	1.11	1.45
MPS	125.41 ±	66.53	93.80 ±	51.29	3.69***
critical psychological states					
experienced meaningfulness	5.13 ±	1.27	4.72 ±	1.09	2.45*
experienced responsibility	5.54 ±	.91	5.16 ±	1.02	3.02**
knowledge of results	5.08 ±	1.07	4.94 ±	1.06	.99
affective responses to job					
general satisfaction	4.58 ±	1.37	4.25 ±	1.24	1.85
internal work motivation	5.28 ±	1.03	5.12 ±	.98	1.15
specific satisfactions					
pay	3.92 ±	1.73	4.04 ±	1.68	.52
job security	4.69 ±	1.49	4.48 ±	1.54	1.02
social	5.52 ±	.95	5.54 ±	1.04	.14
supervisory	4.97 ±	1.58	4.97 ±	1.46	.00
growth	4.77 ±	1.41	4.54 ±	1.22	1.24
growth need strength					
would like format	5.25 ±	1.16	4.87 ±	1.33	2.33*
job choice format	2.99 ±	.56	2.79 ±	.48	2.60*

* $P \leq .05$
** $P \leq .01$
*** $P \leq .001$

Fig. 11. Core job dimension scores for high and low MPS jobs

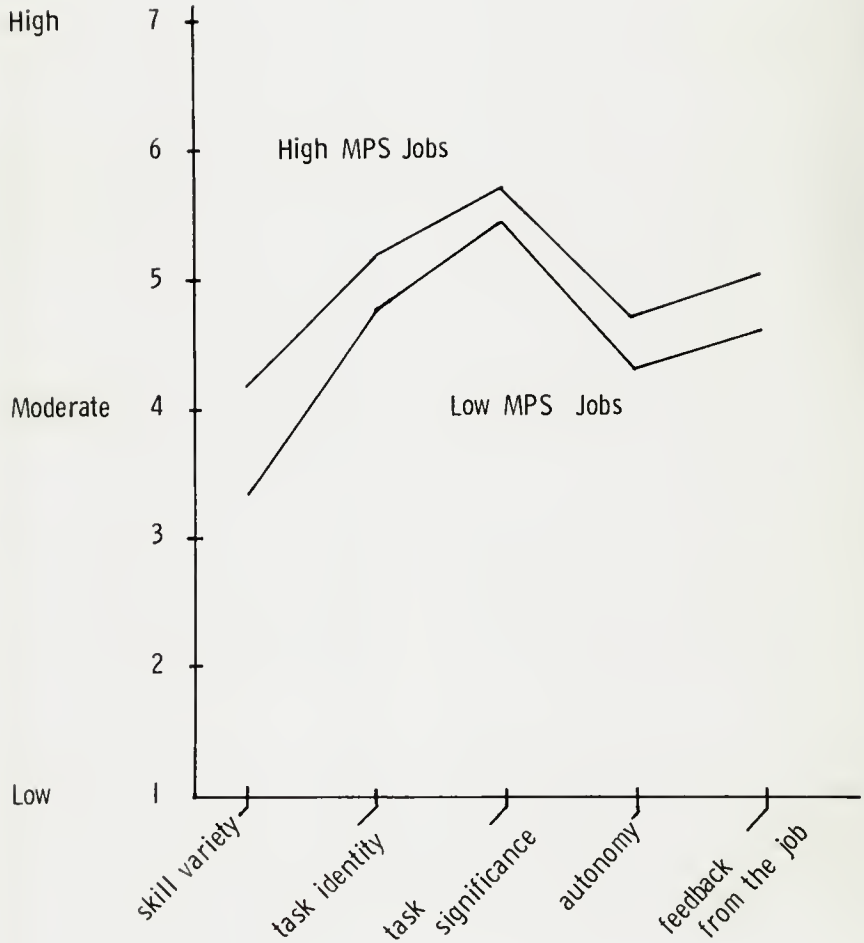
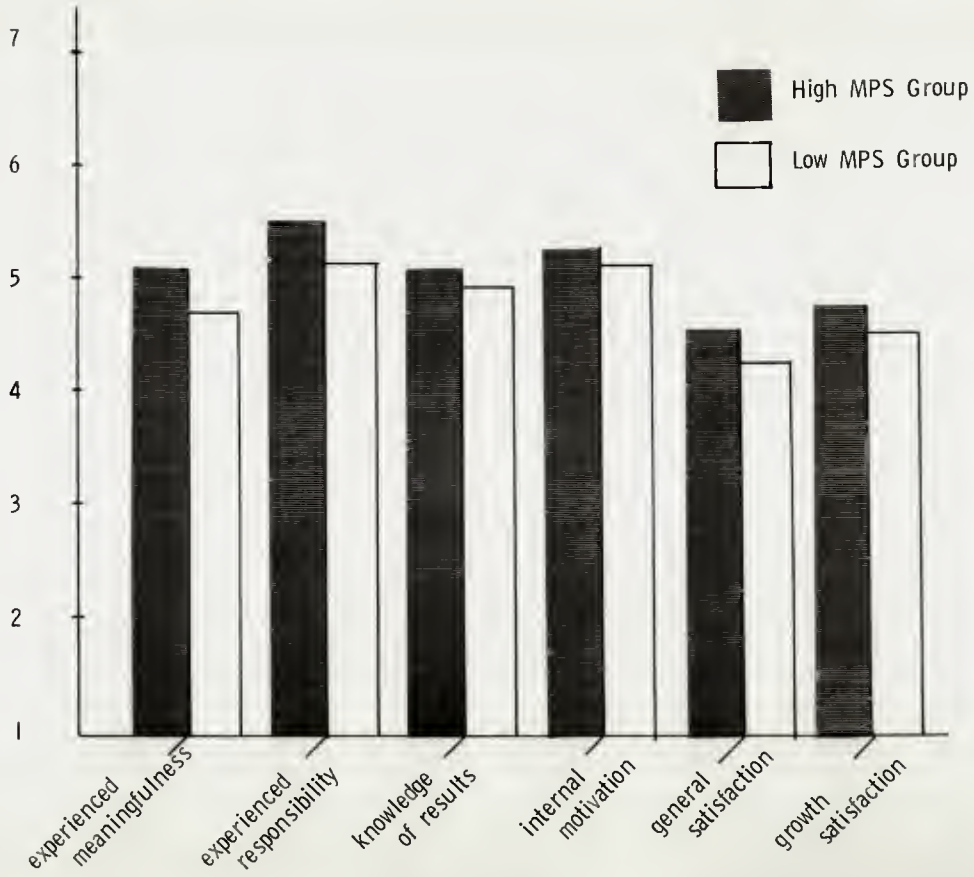

High
7
6
5
Moderate
4
3
2
Low
1
High MPS Jobs
Low MPS Jobs
skill variety
task identity
task significance
autonomy
feedback from the job

Fig. 12. Critical psychological state and affective response scores for high and low MPS jobs


7
6
5
4
3
2
1
High MPS Group
Low MPS Group
experienced meaningfulness
experienced responsibility
knowledge of results
internal motivation
general satisfaction
growth satisfaction

The job characteristics theory proposes that to the extent people experience the critical psychological states, the result will be reflected in personal and work outcomes. Therefore, the core job dimensions and critical psychological states data in Table 26 would suggest that the affective responses (personal outcomes) and performance scores (Table 27) (work outcomes) would be higher for the high MPS group. The mean affective response scores were all higher for the high MPS group, except for pay and social satisfaction. Although the direction of the differences was as predicted, the differences were not statistically significant (Figures 12 and 13).

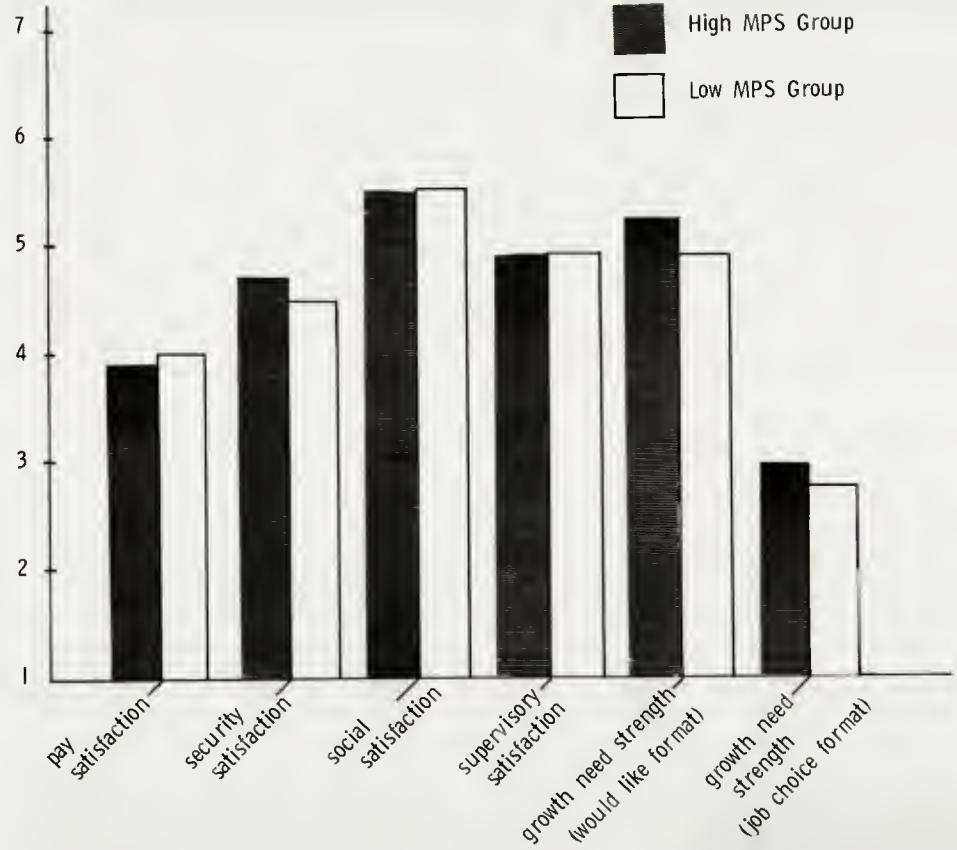
Table 27: Work performance measures between high and low MPS jobs

measures	high MPS jobs		low MPS jobs		t value
	mean	s.d.	mean	s.d.	
supervisory ratings:					
quality of work	3.52	± .86	3.18	± .75	2.95**
quantity of work	3.63	± .74	3.16	± .69	4.68***
following directions	3.65	± .74	3.21	± .64	4.48***
initiative and judgment	3.53	± .86	3.07	± .75	4.02***
attendance	4.07	± .92	3.48	± 1.00	4.58***
personal relations	3.76	± .76	3.36	± .69	3.90***
overall job performance	22.14	± 4.03	19.44	± 3.73	5.01***
absenteeism	2.13	± 3.12	2.59	± 5.29	.85

** $P \leq .01$
*** $P \leq .001$

The mean growth need strength scores between the high and low MPS groups significantly favored the high MPS group. Those employees in the high MPS jobs perceived their jobs to be higher in the core job dimensions

Fig. 13. Specific satisfaction and growth need strength scores for high and low MPS jobs


High MPS Group
Low MPS Group
7
6
5
4
3
2
1
pay satisfaction
security satisfaction
social satisfaction
supervisory satisfaction
growth need strength (would like format)
growth need strength (job choice format)

(Table 26). Cashiers, cooks, dietetic clerks, and storeroom workers appear to have more challenging jobs. As suggested earlier, challenging work may have developed growth need in this sample of foodservice workers.

The higher growth need also should have supported the prediction that the personal outcomes for the high MPS job group would be higher than for the low MPS group. The data between core job dimensions and affective response scores suggest that other factors may be moderating the relationship between job design and personal outcomes for these hospital foodservice employees. As Schwab and Cummings (66) concluded, there appears to be a large number of covariates that account for differences among study samples and their work satisfaction. Although the high MPS group showed a higher growth need strength, the affective response scores suggest that both the high and low MPS groups may possess similar desires for pay, job security, socialization opportunities at work, supervision, and opportunity to grow.

Work Performance Between High and Low MPS Jobs

Table 27 shows that the mean supervisory ratings of work performance for the high MPS job holders were significantly higher in every category than those for the low MPS job holders. The core job dimensions differences favored the high MPS jobs, as did the psychological state scores, but the affective responses were not statistically different between the groups although the trend favored the high MPS jobs. The high MPS group also had significantly greater growth need strength which may be translated into higher job performance, or affect performance. Figures 14 and 15 graphically show the performance data between high and low MPS jobs. The higher core job dimensions and critical psychological state scores

Fig. 14. Overall job performance scores for high and low MPS jobs

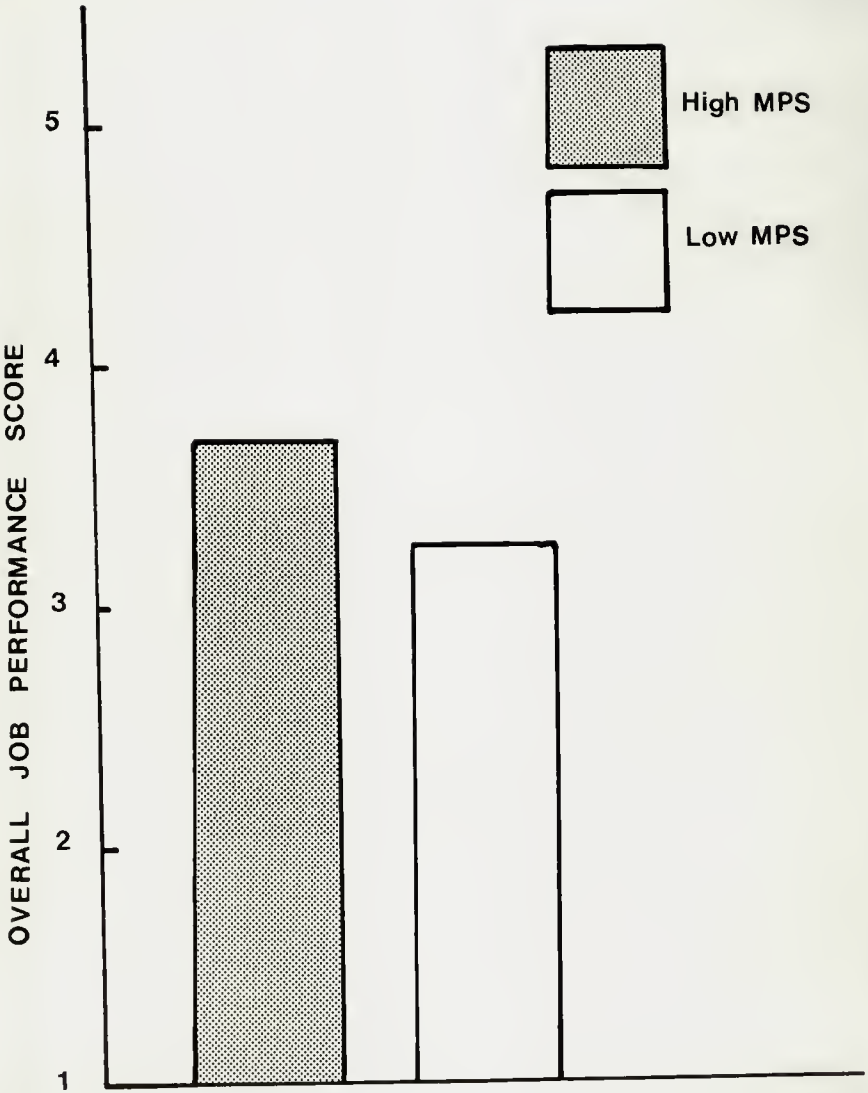
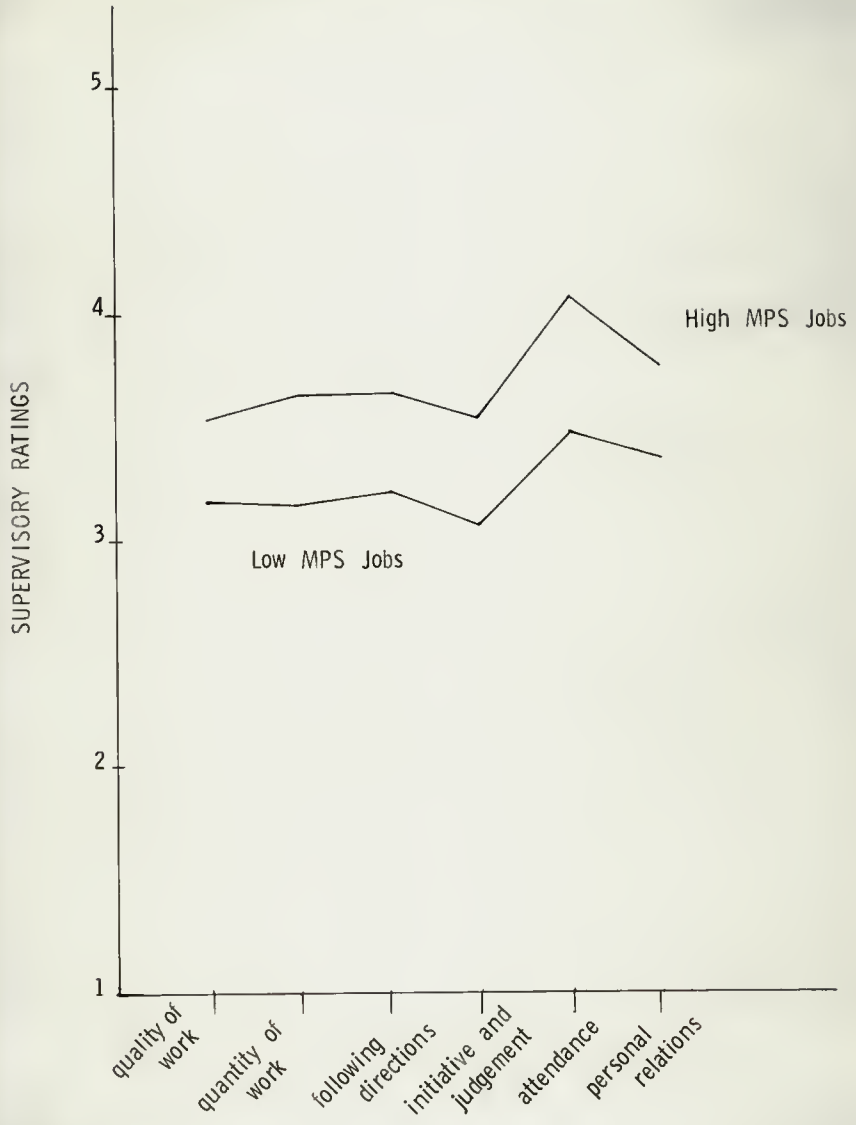

High MPS
Low MPS
OVERALL JOB PERFORMANCE SCORE
5
4
3
2
1

Fig. 15. Supervisory ratings for high and low MPS jobs


SUPERVISORY RATINGS
5
4
3
2
1
High MPS Jobs
Low MPS Jobs
quality of work
quantity of work
following directions
initiative and judgement
attendance
personal relations

appeared to be translated into higher job performance. Absenteeism (Figure 16) was not significantly different but absenteeism was somewhat higher with low MPS jobs, a finding consistent with supervisory reports of attendance (Figure 15) and with expectations that absentee level increases as performance level decreases.

The high MPS jobs appear to be more challenging jobs, thereby eliciting performance from the job holders. Regardless of degree of job related satisfaction experienced by the worker, foodservice jobs that are designed to be more challenging (cook, dietetic clerk, cashier, and storeroom worker) may result in more positive work performance than less challenging jobs. If sanitation work, general foodhandling tasks, and other routine jobs cannot be designed with more challenge, it may be necessary to continually reinforce the extrinsic rewards to encourage worker performance in these less desirable activities.

Effects of System and Job

A two-way ANOVA was computed to investigate the simultaneous effects of system type (conventional versus technical) and job type (high MPS versus low MPS) on the critical psychological states, affective responses, and growth need strength scores (Table 28). Analysis showed that system type had a main effect on three of these JDS scale scores. Job type data indicated main effects on four scores. The F values for interactions of type of system and job type were not significant for any of the JDS scores. The core job dimensions were not included in this analysis because comparison by type of system showed no significant differences on the basis of core job dimensions (Table 18).

Table 29 presents the corresponding means and standard errors for the JDS scores where there was statistical significance. Significant

Fig. 16. Absenteeism rate[1] for high and low MPS jobs

[1]Defined as number of occasions employee was absent during a specified six month period preceding data collection visits to hospitals

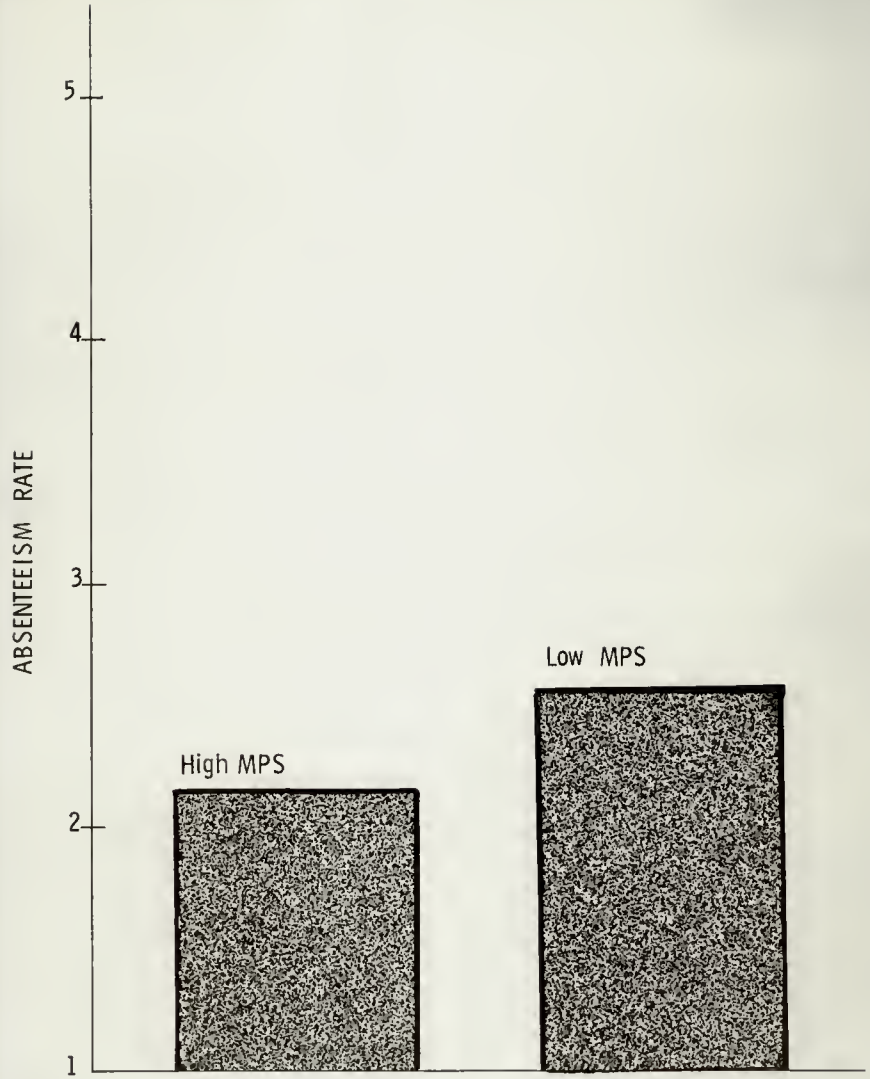

ABSENTEEISM RATE
5
4
3
2
1
High MPS
Low MPS

Table 28: F ratios for two-way analysis of effects of system and job type on JDS scores

JDS scores	effects of: system (S)	job type (T)[1]	interaction of S × T
critical psychological state			
experienced meaningfulness	6.50*	5.65*	0.27
experienced responsibility	14.96***	8.51**	1.15
knowledge of results	1.13	1.12	.45
affective responses			
general satisfaction	1.75	3.70	.16
internal motivation	4.14*	1.20	.04
pay satisfaction	.07	.25	.00
security satisfaction	2.53	.94	.04
social satisfaction	2.76	.02	2.62
supervisory satisfaction	3.07	.00	.40
growth satisfaction	3.73	2.52	2.55
growth need strength			
would like format	.93	4.41*	.11
job choice format	.98	7.60**	.29

[1] Job type = high or low MPS group.

* $P \leq .05$
** $P \leq .01$
*** $P \leq .001$

Table 29: Means for critical psychological state and internal work motivation scores by type of system and job type[1]

	experienced meaningfulness		experienced responsibility		internal work motivation	
	mean	std. error	mean	std. error	mean	std. error
system						
conventional	4.77	± .10	5.14	± .08	5.09	± .09
technical	5.17	± .12	5.66	± .10	5.37	± .10
job type						
high MPS	5.16	± .13	5.60	± .11		
low MPS	4.78	± .08	5.21	± .07		

[1]Results of two-way analysis of variance. Data presented only for significant findings.

differences were found on experienced meaningfulness, experienced responsibility, internal work motivation, and growth need strength scores. Employees in the technical systems experienced significantly more meaningfulness in their work, responsibility for the outcomes of their work, and internal work motivation than did the employees in the conventional systems. The high MPS job holders experienced higher levels of meaningfulness and responsibility for the outcomes of their work. The system result differences appear to be attributed to variables other than the core job dimensions because they were not significantly different between system types (Table 18). The technical systems employees may have experienced more meaningfulness, responsibility, and internal work motivation as a result of their training and orientation to the "new" systems prior to moving to the new systems. New recruits may have benefited similarly as part of their recruitment and placement into the

new, more "sophisticated" organizations. Whereas, the members of the conventional systems were not given any special training or orientation as that provided to the technical system workers.

The high MPS jobs lead to significantly higher experienced meaningfulness and responsibility scores than did the low MPS jobs. These data suggest that skill variety and task identity may lead to experienced meaningfulness without the presence of high task significance (Table 26) for these foodservice employees. The data also suggest that autonomy does contribute to experienced responsibility. For this sample, however, job feedback may not influence knowledge of results as Hackman et al. (116) hypothesized. These employees may expect the feedback on their performance to come from others such as supervisors, co-workers, or customers more than from the job itself.

Table 30 shows the F ratios for the two-way ANOVA for studying effects of system and job type on overall work performance and absenteeism. There was a significant main effect on the performance score for

Table 30: F ratios for two-way analysis of effects of system and job type on work outcomes

	effects of		
work outcomes	system (S)	job type (T)[1]	interaction of S × T
overall work performance	8.63**	25.20***	3.96*
absenteeism	.01	.38	2.76

[1]Job type = high or low MPS group.

* $P \leq .05$
** $P \leq .01$
*** $P \leq .001$

both system and job type, as well as significant interaction between these two variables. F ratios indicated no significant differences in the absentee measure. Mean scores for performance ratings are shown in Table 31. The pattern between high and low MPS jobs was the same for both types of systems. The mean score for overall work performance was highest, however, for the high MPS group in the technical system (73.93). The group composed of cashiers, cooks, dietetic clerks, and storeroom workers had the highest performances, regardless of system. Although some jobs may be designed to elicit positive work outcomes for hospital foodservice employees, results suggest that job design alone, however, may not enhance worker performance as much as the combination of job

Table 31: Means for overall work performance and absenteeism by type of system and job type[1]

	overall work performance		absenteeism	
	mean	std. error	mean	std. error
system				
conventional	63.20	± 1.06	3.43	± .62
technical	68.09	± 1.29	3.24	± .73
job type				
high MPS	69.83	± 1.41	3.00	± .82
low MPS	61.46	± .89	3.59	± .51
interaction between system and MPS group				
conventional/high MPS	65.72	± 1.81	3.85	± 1.08
conventional/low MPS	60.67	± 1.10	2.84	± .63
technical/high MPS	73.93	± 2.16	2.15	± 1.23
technical/low MPS	62.25	± 1.40	4.33	± .79

[1]Results of two-way analysis of variance.

design and the association of that job with a technically oriented foodservice system. The prestige and improved working conditions associated with the "new" systems may contribute to the positive work performance of the system's members in the high MPS type jobs.

Length of employment at hospital, in present job, and in foodservice were compared using two way ANOVA by type of system and job (Table 32). Between the conventional and technical systems, there was no main effect on the basis of tenure for the employees in those systems. However, the mean tenure at hospital, in present job, and in foodservice were all significantly higher for the high MPS jobs. This finding might be expected because the job an individual holds would be more a function of tenure than whether or not the individual worked in a technical or conventional system. For example, a cook may have advanced through the "ranks" from general kitchen worker to the more tenured, skilled job of cook. The example of cook was cited because cook is one of the high MPS

Table 32: Tenure by type of system and job type[1]

	length of employment in months		
	at hospital	in present job	in foodservice
	mean	mean	mean
system			
conventional	40.1	30.35	64.05
technical	36.6	23.74	73.71
job type			
high MPS	47.9	32.45	87.55
low MPS	28.9	21.63	50.21

[1]Significant difference in means by job type; system, n.s.

jobs and data in Table 13 showed that cook was the single most tenured job of the nine jobs in all three tenure categories.

Outcome Measures by Type of System

The results of the two-way analysis of variance prompted further consideration of the differences between conventional and technical systems. Multiple regression was used for additional analysis of the outcome variables (general satisfaction, internal work motivation, the five specific satisfactions, and overall job performance). The two critical psychological state scores for which differences were found by system type and the two growth need strength scores were the independent variables in the equations. The eight outcome measures were the dependent variables. Analyses were computed separately for each type of system. Table 33 presents the results of the multiple regression analyses by type of system.

In terms of criteria (or dependent variables) the two systems differed in that internal work motivation and job performance were higher in the technical systems. In terms of independent variables, experienced meaningfulness of work and experienced responsibility were higher in the technical systems. In general, it appears that:

(1) Experienced meaningfulness of work was a more useful predictor for the conventional than for the technical systems.

(2) Experienced responsibility is important for both types of systems, but not necessarily on the same criteria.

(3) "Would like" growth need strength seemed to be as relevant a predictor for one system as the other.

Table 33: Multiple regression analyses for outcome variables by system

independent variables	general satisfaction β	general satisfaction std. error	general satisfaction r	internal work motivation β	internal work motivation std. error	internal work motivation r	pay satisfaction β	pay satisfaction std. error	pay satisfaction r	security satisfaction β	security satisfaction std. error	security satisfaction r
conventional system (N=149)												
experienced meaningfulness	.59	.08	.64	.37	.06	.61	.64	.11	.45	.36	.10	.52
experienced responsibility	.21	.10	.45	.36	.07	.58				.58	.12	.57
growth need strength (would like format)				.10	.05	.13						
growth need strength (job choice format)												
constant		.38			.98			1.01			-.23	
R^2		.41			.46			.19			.34	
F ratio		52.09			42.07			33.40			38.32	
technical system (N=92)												
experienced meaningfulness	.47	.12	.49				.31	.15	.25	.30	.14	.23
experienced responsibility	.26	.15	.39	.53	.08	.56						
growth need strength (would like format)				.16	.06	.18	-.28	.12	-.19			
growth need strength (job choice format)				-.32	.15	-.13				.72	.29	.23
constant		.57			2.52			3.69			1.06	
R^2		.26			.36			.10			.06	
F ratio		15.60			16.64			4.95			5.34	

Table 33: (cont.)

independent variables	social satisfaction β	social satisfaction std. error	social satisfaction r	supervisory satisfaction β	supervisory satisfaction std. error	supervisory satisfaction r	growth satisfaction β	growth satisfaction std. error	growth satisfaction r	overall job performance β	overall job performance std. error	overall job performance r
conventional system (N=149)												
experienced meaningfulness	.19	.08	.35	.28	.12	.34	.60	.08	.66	.50	.25	.17
experienced responsibility	.21	.09	.34	.28	.14	.38	.29	.09	.54			
growth need strength (would like format)	.11	.06	.15	.21	.09	.14						
growth need strength (job choice format)												
constant	2.95			1.10			.22			17.54		
R^2	.18			.16			.45			.03		
F ratio	10.38			9.32			60.92			3.82		
technical system (N=92)												
experienced meaningfulness				.39	.14	.30	.43	.11	.50			
experienced responsibility	.61	.11	.49				.29	.13	.44	1.72	.53	.31
growth need strength (would like format)	.14	.07	.20									
growth need strength (job choice format)										2.06	.86	.21
constant	1.59			3.15			.89			5.46		
R^2	.29			.08			.28			.15		
F ratio	18.11			7.85			17.62			7.70		

(4) "Job choice" growth need strength was not relevant for the conventional systems but was relevant as a predictor for two of the eight outcome measures in the technical systems.

(5) Satisfaction can be predicted more accurately than performance ratings; although, satisfaction criteria were more accurately predicted for the conventional than for the technical systems. Performance ratings, however, were more accurately predicted for the technical than for the conventional systems.

Effects of Tenure and Wages on Outcome Measures

Effects of Tenure

Tenure and Affective Responses. Correlations between tenure and affective response scores are presented in Table 34. All the correlation coefficients were .25 or lower, suggesting a limited relationship between tenure and personal outcomes on the job. General satisfaction showed a moderate relationship with tenure at hospital (.22), in present job (.19), and in foodservice (.23). Interestingly, the relationships between pay satisfaction with all three tenure categories and security satisfaction with all three tenure categories were the same, .20, .15, and .17, respectively. Martin and Vaden (15) found that the female nonsupervisory foodservice workers employed less than six months or longer than three years were more satisfied than those employed between six months and three years. The hospital foodservice employees in this study also had somewhat greater job satisfaction with increased tenure as evidenced by the positive, significant correlations between tenure and general job satisfaction, and pay, security, and growth satisfaction. As tenure increased, these workers may have become more oriented to their jobs or they may

have reduced their expectations, thus finding satisfaction with the job more attainable. Additionally, the employees that have maintained their continuous organizational association over time may have done so through a selectivity process. Their personal choices may have influenced the degree of satisfaction they experienced on the job.

Table 34: Correlations between tenure and affective response scores[1]

affective response scores	length of employment		
	at hospital	in present job	in foodservice
general satisfaction	.22	.19	.23
internal motivation	.04	.00	.16
pay satisfaction	.20	.15	.17
security satisfaction	.20	.15	.17
social satisfaction	-.03	.00	.03
supervisory satisfaction	.10	.10	-.02
growth satisfaction	.25	.21	.20

N = 264

[1] $P \leq .01 = r\ .16$
$P \leq .001 = r\ .19$

Tenure and Job Performance. Correlations between tenure and job performance measures are presented in Table 35. The strongest relationships were between supervisor rating of attendance and length of employment at hospital (.31), in present job (.28), and in foodservice (.31). Perhaps the longer an employee stays with one organization the more reliable he/she becomes because identification with the organization and

its goals increases. Hopkins (16) found that a larger percentage of the high performers in her school foodservice sample had been employed over three years.

Table 35: Correlations between tenure and job performance measures[1]

work performance measures	length of employment		
	at hospital	in present job	in foodservice
supervisory ratings			
work quality	.07	.09	.21
work quantity	.07	.08	.18
following directions	.10	.06	.21
initiative and judgment	-.04	.00	.04
attendance	.31	.28	.31
personal relations	-.05	-.05	.05
overall job performance	.11	.11	.21
absenteeism	.01	.01	.03

N = 265

[1] $P \leq .05 = r .11$
$P \leq .01 = r .18$
$P \leq .001 = r .21$

Hopkins (16) hypothesized that work orientations are brought to the work place and may affect performance, satisfaction, and organizational identification. Her evidence suggested that performance outcomes were related to individual perceptual outcomes of job satisfaction and organizational identification.

Porter and Lawler (73) suggested that job performance is moderated by employee traits, abilities, role perceptions, and the degree to which the employee perceives actual rewards in relation to perceived equitable rewards. The non-supervisory members of the foodservices in this study

may have performed better as their tenure increased because they increasingly perceived the actual rewards received as more equitable with their expectations. Additionally, as time passes employees leave organizations for any number of reasons. Those who remain as organizational members remain by choice and, therefore, may have committed themselves to be reliable attendees in spite of their degree of job satisfaction or level of performance while on duty.

Work quality was related more to the time an individual had been in foodservice (.21) than to time employed by the same hospital foodservice (.07) or time employed in present job (.09). A similar relationship was found for work quantity, following directions, and overall performance. These data may imply that employees who choose foodservice as a career will tend to perform better on the job. Tenure, in general, was significantly higher for the high versus the low MPS jobs (Table 32). The high MPS group tended to have the higher wages (Table 14). These data suggest that given the opportunity to do more enriching tasks foodservice employees will remain with the organization and perform better as well. Additionally, the longer these individuals remain with the organization their personal goals and objectives may become consistent with those of the organization which in turn may be translated into improved work performance.

Effects of Wages

Table 36 shows the correlations between wage rates and affective response scores. General satisfaction was moderately related to wage rate (.23) as was satisfaction with pay (.21). The growth satisfaction-wage correlation (.30) was the highest of those computed between affective

Table 36: Correlations between wage rates and affective response scores[1]

affective response scores	wage rate
general satisfaction	.23
internal work motivation	.16
pay satisfaction	.21
security satisfaction	.19
social satisfaction	.07
supervisory satisfaction	.10
growth satisfaction	.30

N = 272

[1] $P \leq .05 = r\ .10$
$P \leq .01 = r\ .16$
$P \leq .001 = r\ .21$

responses and wage rates. For those employees seeking growth satisfaction on the job, higher wages may have been perceived as rewards, recognition, or a symbol associated with personal accomplishment. Therefore, as wages increased the employees may have experienced some satisfaction for their need to grow. Higher wages were also a characteristic of the high MPS jobs (Table 14). Almost all the JDS scale scores favored the high MPS jobs (Table 26). The higher wages combined with the more positively designed jobs of cooks, dietetic clerks, cashiers, and storeroom workers may have influenced the positive wage-affective response relationships.

Herzberg (70) hypothesized that extrinsic rewards such as wage only serve to prevent worker dissatisfaction and that internal work motivation results from designing work to be challenging to the worker. The weak

wage-internal motivation relationship ($r = .16$) for this study's sample provides support for Herzberg's contention.

Job Performance Level and Job Type Effects

Baird (118) studied the relationship of performance to satisfaction in stimulating and nonstimulating jobs in a large state agency. The jobs ranged from administrative to clerical and secretarial positions. Degree of stimulation for each of the eight jobs was determined by three raters using the JDS to score the core job dimensions and dealing with others. The three sets of scores were summed and averaged together, resulting in mean scores for each job ranging from a high of 34.57 to a low of 17.04. Stimulating jobs were the top five, and the bottom three were the non-stimulating jobs. The subjects were divided into those working on stimulating versus nonstimulating jobs. Using standardized performance ratings, the subjects were divided into good and poor performers. This created a two × two design within which the JDI satisfaction scores were considered the dependent variables.

Baird (118) found that performance and satisfaction with work were positively related for employees working on nonstimulating jobs, but were not related at all for those employees working on stimulating jobs. Baird concluded that the key variable in determining these relationships was the nature and use of feedback. Employees working on the stimulating jobs did not appear to be receiving information about their performance from the organization. On the nonstimulating jobs, feedback appeared to be provided by the organization.

To compare the results of this study with those of Baird (118) the effects of job type (high and low MPS jobs) and performance level (high

and low rated performance scores) on the affective responses and growth need strength were studied. The high MPS jobs were equated to the stimulating jobs of Baird's (118) research and low MPS jobs were equated to the nonstimulating jobs. Performance groups were determined from mean overall performance scores. A subject with a score above the mean (63.5) was placed in the high performance group and those with scores equal to or below the mean were placed in the low performance group.

Table 37 shows the F ratios for a two-way analysis of variance for effects of job type and performance and their interaction on the affective response scores and growth need strength scores. The data suggest that job type did not have significant effects on the affective responses but does affect "job choice" growth need strength ($F = 6.99$). The interactions of job type and performance level were not significant. The performance level alone appeared to have significantly affected all the affective response scores except pay satisfaction or growth need strength.

Mean scores for affective responses by high and low performance groups are shown in Table 38 for scores where the findings differed significantly in the two-way analysis of variance. The high performance group had significantly higher scores on all measures except for supervisory satisfaction.

Contrary to Baird's (118) results with white collar workers, in this study the foodservice workers who were high performers experienced greater satisfaction. Whereas, those foodservice workers in high MPS jobs did not experience any more job satisfaction than those in the low MPS jobs when effects of performance were controlled. Performance appeared to lead to satisfaction, not satisfaction leading to performance.

Table 37: F ratios for two-way analysis of effects of job type and overall work performance on affective response and growth need strength scores[1]

scores	effects of job type (T)	performance level (P)	interaction of T × P
affective responses			
general satisfaction	1.29	7.22**	1.49
internal motivation	.52	5.47*	.38
pay satisfaction	1.44	3.59	.94
security satisfaction	.04	15.13***	.47
social satisfaction	1.00	11.42***	.89
supervisory satisfaction	1.10	10.68**	.21
growth satisfaction	.08	9.60**	.17
growth need strength			
would like format	3.07	1.75	.01
job chcice format	6.99**[2]	.00	.19

[1] Job type = high or low MPS job.
Performance level = high or low rating.

[2] Data shown previously for scores by job type.

* $P \leq .05$
** $P \leq .01$
*** $P \leq .001$

Table 38: Means for affective responses by high and low performance level[1]

JOS scores	performance level	
	low	high
	mean ± std. error	mean ± std. error
general satisfaction	4.20 ± .14	4.68 ± .12
internal motivation	5.05 ± .11	5.38 ± .09
security satisfaction	4.15 ± .16	4.98 ± .14
social satisfaction	5.28 ± .11	5.77 ± .09
supervisory satisfaction	4.60 ± .16	4.28 ± .14
growth satisfaction	4.38 ± .13	4.94 ± .12

[1]Results of two-way analysis of variance. Data presented only for significant findings.

The results also suggested that high performance significantly contributed to internal motivation. Another interesting implication is that the high performers in these hospital foodservices may be dissatisfied with their supervisors. Perhaps as a worker's performance improves he/she may become more critical of his/her supervisor and may expect more autonomy on the job than the supervisor is willing to permit.

Moderating Effects of Growth Need Strength (GNS)

Oldham et al. (120) tested the moderating effects of employee growth need strength and job context satisfaction on employee responses to enriched work. Their results showed that employees who had strong growth needs and were satisfied with work context (pay, job security, co-workers, and supervisors) responded more positively to enriched jobs

than did employees who had weak needs for growth and/or who were dissatisfied with the contextual factors of the job.

Analyses similar to those of Oldham et al. (120) were computed for data from this study. A high growth need group was determined by identifying subjects falling into the top quartile for all growth need scores as computed from the "job choice" format of the JDS. The low growth need group were those participants whose scores fell into the bottom quartile of the growth need strength scores. After computing the correlations between motivating potential scores (MPS) and the outcome measures (overall job performance, general satisfaction, internal work motivation, wage rate, days absent, tenure in organization, and tenure in present job) for the low GNS and the high GNS groups, Graybill's u statistic (136) was used to compare the two groups (Table 39). The groups appeared to be similar as no significant difference was found between the two sets of relationships. GNS did not appear to moderate the relationship between personal and work outcomes, and motivating potential score. Other variables may have a moderating effect on the MPS-outcome measures relationships, such as the work context factors, satisfaction with pay, supervision, security, and interpersonal relationships.

Moderating Effects of Work Context Factors

Analyses similar to those in the Oldham et al. (120) study were used to test the moderating effects of work context factors on the MPS/work outcome relationship. A score for work context was computed by summing the scores for pay, security, social, and supervisory satisfaction. Groups were determined on the basis of the median score for each

Table 39: Relationships between MPS and outcome measures as moderated by employee growth need strength

outcome measure	growth need strength low[1] (N=64)	high[2] (N=81)	u
overall job performance	.17	.17	.00
general satisfaction	.50	.30	1.97
internal work motivation	.42	.46	.08
wage rate	.29	.39	.44
days absent	-.23	.09	3.25
tenure in organization	.47	.27	1.81
tenure in present job	.41	.30	.52

[1] $P \leq .05 = r\ .22$

[2] $P \leq .05 = r\ .21$

satisfaction category. Scores above the median were categorized as high satisfaction and those below the median comprised the low group. A correlation between MPS and each of the outcome measures was computed for both the low and high groups in each of the five satisfaction categories. Graybill's u statistic was used to test for differences between groups.

Table 40 shows the relationships between MPS and outcome measures as moderated by satisfaction with work context factors. The MPS/overall job performance relationship was significantly higher for those employees who were in the high pay satisfaction group. This finding suggested that job performance may increase most when a job is high in motivating potential

Table 40: Relationships between MPS and outcome measures as moderated by satisfaction with work context factors

outcome measures	work context			pay satisfaction			security satisfaction			social satisfaction			supervisory satisfaction		
	low	high	u	low	high	u	low	high	u	low	high	u	low	high	u
overall job performance	.09	.25	1.71	.09	.36	5.08*	.12	.23	.80	.13	.31	2.25	.17	.24	.33
general satisfaction	.29	.29	.00	.36	.30	.29	.28	.29	.01	.22	.44	3.99	.30	.33	.07
internal work motivation	.37	.33	.14	.42	.33	.70	.38	.33	.21	.32	.41	.70	.45	.33	1.28
wage rate	.14	.27	.72	.17	.24	.34	.15	.26	.85	.18	.30	1.05	.11	.28	2.00
days absent	-.15	.01	1.49	-.01	-.01	.00	-.08	-.03	.14	-.17	.00	1.69	-.19	.00	2.06
tenure in organization	.15	.08	.31	.21	.38	2.18	.22	.03	2.35	.06	.29	3.58	.16	.09	.31
tenure in present job	.09	.11	.02	.17	.31	1.34	.17	.06	.76	.02	.26	3.70	.08	.11	.06

N = 90-139

*$P \leq .05$

and the worker experiences satisfaction with the pay he/she receives for the work performed.

A similar investigation was performed for moderating effects of employee growth need strength on the high and low MPS/outcome measures relationship (Table 41). Growth need strength groups were divided into high, or those with scores above the median growth need strength score and low, those below the median. There was no statistical support for differences between the high and low growth need groups on the high and low MPS/outcome measures relationships, nor was there any consistent direction of the relationships between scores. These data suggest that growth need strength does not moderate between MPS and outcome measures for this sample of employees, whether the jobs are high or low in motivating potential.

Work Context Satisfaction and Low Versus High MPS Jobs

Table 42 shows the comparison of relationships between MPS and the outcome measures for high versus low MPS jobs as moderated by satisfaction with work context factors. In the high MPS jobs the only significant moderating effect was supervisory satisfaction on the days absent/MPS relationship. Graybill's u statistic showed that those high MPS employees who were in the low supervisory satisfaction group had a decreasing absentee rate as their satisfaction with supervision increased. Whereas, those high MPS employees who were in the high supervisory satisfaction group had slightly higher absentee rates as their satisfaction with supervision increased. This difference suggests that supervisory satisfaction had a moderating effect on the MPS/work outcome relationship.

In the low MPS jobs (Table 42) the only work context satisfaction moderator for the MPS/work outcome measures was social satisfaction. The

Table 41: Relationships by job type between MPS and outcome measures as moderated by employee growth need strength (GNS)[1]

outcome measures	high MPS jobs			low MPS jobs		
	low GNS (N=34)	high GNS (N=33)	u	low GNS (N=91)	high GNS (N=88)	u
overall job performance	.27	.00	1.15	.24	.16	.29
general satisfaction	.69	.36	3.38	.45	.21	3.19
internal work motivation	.34	.50	.58	.39	.32	.29
wage rate	.33	.32	.00	.11	.12	.00
days absent	-.27	.08	1.79	-.03	.03	.14
tenure in organization	.24	.18	.06	.18	.10	.28
tenure in present job	.29	.25	.03	.03	.07	.07

N = 31-91

[1]No significance.

Table 42: Relationships by job type between MPS and outcome measures as moderated by satisfaction with work context factors

outcome measures	work context			pay satisfaction			security satisfaction			social satisfaction			supervisory satisfaction		
	low	high	u	low	high	u	low	high	u	low	high	u	low	high	u
high MPS jobs:[1]															
overall job performance	-.10	.23	1.84	-.03	.33	.02	.06	-.03	.13	.07	.11	.03	.14	.10	.03
general satisfaction	.35	.19	.50	.48	.27	1.01	.35	.27	.13	.26	.47	1.00	.31	.51	.98
internal work motivation	.46	.36	.24	.50	.41	.22	.44	.44	.00	.44	.51	.14	.33	.60	2.04
wage rate	.05	.30	1.13	.13	.17	.03	.20	.26	.07	.20	.26	.07	.14	.36	.93
days absent	-.26	.05	1.52	-.32	-.06	1.12	.16	.13	.01	-.22	-.12	.16	-.39	.17	5.19*
tenure in organization	.11	.00	.20	.21	-.08	1.42	.13	.03	.16	.07	.14	.08	.07	.09	.01
tenure in present job	.07	.19	.24	.22	.11	.21	.10	.28	.54	.07	.23	.43	-.01	.36	2.39

[1] N = 32-39

* $P \leq .05$

Table 42: (cont.)

outcome measures	work context			pay satisfaction			security satisfaction			social satisfaction			supervisory satisfaction		
	low	high	u	low	high	u	low	high	u	low	high	u	low	high	u
low MPS jobs:[2]															
overall job performance	.06	.18	.66	.04	.28	2.70	.17	.12	.12	.13	.25	.69	.10	.21	.56
general satisfaction	.26	.21	.13	.29	.28	.01	.28	.22	.19	.22	.36	1.09	.25	.25	.00
internal work motivation	.35	.28	.28	.39	.29	.59	.37	.26	.69	.23	.40	1.66	.45	.23	2.88
wage rate	.07	.10	.04	.10	.08	.02	.07	.12	.12	.06	.16	.48	.01	.12	.56
days absent	-.08	.04	.59	.08	-.06	.80	-.04	-.01	.04	-.13	.04	1.18	-.15	.02	1.17
tenure in organization	.16	.02	.90	.13	.04	.37	.16	.01	1.03	.01	.31	4.31*	.16	.05	.55
tenure in present job	.12	-.04	3.28	.08	-.03	.52	.13	-.05	1.42	.01	.18	1.29	.08	-.01	.35

[2] N = 79-106

low MPS employees tended to have more social satisfaction from their jobs the longer they stayed with the organization.

Oldham et al. (120) also tested the hypothesis that employees satisfied with work context factors show higher correlations between MPS and outcome measures. Testing the same hypothesis in a similar fashion, the results for the foodservice sample in this study (Table 42) did not support findings of Oldham et al. (120). The outcome measures of the high and low MPS job holders in these hospital foodservices did not appear to be moderated by satisfaction with the contextual factors of their jobs. Satisfied or not, some of these employees performed well and some did not. Some were internally motivated and some were not. The data imply that there is very little predictability to the relationship between work satisfaction, job design, and outcome measures for this group of hospital foodservice employees.

Combined Effects of Growth Need Strength and Work Context

By combining growth need strength and work context (WC) satisfaction, Oldham et al. (120) found that the relationship between MPS and outcome measures were significantly higher for employees who were satisfied with the organization's internal environment and who were desirous of growth satisfactions than for individuals dissatisfied with context factors and having low growth needs. The correlations reported by Oldham between MPS and outcome measures were all positive and often of high magnitude in the high GNS/high contextual satisfaction group. Correlation coefficients for employees with low growth needs and low contextual satisfactions were negative in many cases and some substantially so.

The combined moderating effects of growth need strength and contextual satisfaction on the MPS/outcome measures relationship were limited in this foodservice study (Table 43). For those employees with low GNS and low pay satisfaction, there was a significantly higher correlation (.56) between general satisfaction and MPS than there was for employees with high GNS and high pay satisfaction (.16).

The low GNS/low WC satisfaction group showed a negative days absent/MPS relationship (-.24); whereas the high GNS/high WC satisfaction group differed significantly with a days absent/MPS correlation of .16.

The contention that employees with work context satisfaction and high growth need are more responsive to enriched jobs is not substantiated with the data in Table 43. The data reported by the hospital foodservice personnel in this study tend to contradict the findings of Oldham et al. (120). The fact that the Oldham et al. sample consisted of white collar workers may have contributed to the difference in results.

Table 43: Relationships between MPS and outcome measures as moderated by growth need strength (GNS) and satisfaction with work context factors (WC)[1]

outcome measures	low GNS/ low WC satisfac- tion	high GNS/ high WC satisfac- tion	u	low GNS/ low pay satisfac- tion	high GNS/ high pay satisfac- tion	u	low GNS/ low security satisfac- tion	high GNS/ high security satisfac- tion	u
overall job performance	.04	.14	.28	.20	.36	.74	.04	.09	.08
general satisfaction	.49	.23	2.62	.56	.16	5.60*	.39	.19	1.47
internal work motivation	.33	.33	.00	.34	.24	.30	.33	.32	.00
wage rate	.12	.44	3.56	.24	.42	1.04	.07	.35	2.66
days absent	-.24	.16	4.17*	-.05	.14	.83	-.11	.18	2.35
tenure in organization	.16	.24	.19	.39	.25	.59	.23	.12	.38
tenure in present job	.05	.31	1.96	.35	.33	.01	.14	.15	.00

[1] N = 45-69

* $P \leq .05$

Table 43: (cont.)

outcome measures	low GNS/ low social satisfaction	high GNS/ high social satisfaction	u	low GNS/low supervisory satisfaction	high GNS/high supervisory satisfaction	u
overall job performance	.08	.22	.58	.04	.11	.14
general satisfaction	.37	.29	.24	.44	.25	1.31
internal work motivation	.22	.27	.08	.37	.35	.02
wage rate	.07	.33	2.19	.08	.40	3.28
days absent	-.22	.07	2.26	-.22	.13	3.12
tenure in organization	.11	.36	2.04	.20	.19	.00
tenure in present job	.05	.41	4.13	.03	.18	.59

SUMMARY AND CONCLUSIONS

New systems are being designed, tested, and implemented in all areas of foodservice operations. Emphasis of design has centered on economic aspects of the systems and technological development. As foodservice technology changes, the design and behavioral characteristics of jobs are affected.

With the advent of job design changes in foodservice systems, many managers are concerned that foodservice workers may be engaged in unenriched work resulting in dysfunctional work behaviors, stifled personal worker growth, and increased psychological and social costs. Hackman and Oldham (13) developed a theory of motivation that proposes that positive personal and work outcomes result from three critical psychological states: experienced meaningfulness of the work, responsibility for work outcomes, and knowledge of the actual results of work activities. Their model proposes that five core job dimensions, skill variety, task identity, task significance, autonomy, and feedback from the work, create these three psychological states. Because all individuals have varying degrees of personal needs and values, growth need strength of an individual is proposed as a moderating variable on the relationship between core job dimensions, critical psychological states, and personal and work outcomes. The purpose of this research was to compare the characteristics and motivating potential of jobs designed for two types of hospital foodservice systems, conventional and highly technical (cook-chill/cook-freeze).

The study sample consisted of 270 non-supervisory personnel from nine midwestern hospital foodservices (five conventional and four on-site highly technical systems). The research instruments were the Job Diagnostic Survey or JDS developed at Yale University, the Job Rating Form, and a performance evaluation form. The JDS, completed by the employees, was designed to measure the behavioral characteristics of jobs (skill variety, task identity, task significance, autonomy, and feedback), critical psychological states (experienced meaningfulness, responsibility for work outcomes, and knowledge of actual results of work activities), affective responses or personal outcomes (general satisfaction, internal work motivation, pay satisfaction, security satisfaction, social satisfaction, supervisory satisfaction and growth satisfaction), individual growth need strength ("would like" and "job choice" formats) and biographical information of job incumbents. The Job Rating Form, completed by the supervisors, was designed to measure the behavioral characteristics of jobs as perceived by someone other than the job holder. Work outcome measures were job performance as rated by supervisory evaluations and absenteeism. The performance evaluation assessed nineteen aspects of job performance within six dimensions: quality of work, quantity of work, ability to follow instructions, initiative and judgment, attendance, and personal relations. Absentee records were reviewed to measure actual attendance. Each occasion of employee initiated, unscheduled absence was considered one unit of absence. To gain insight into the total job environment, other data were collected which included an organizational chart, job descriptions, pay scales and individual employee wage rates, personnel policies, and work schedules. The research instruments were

administered and other data collected during on-site visits at each hospital foodservice.

Nine standard jobs were identified based on the job descriptions supplied by the hospitals: cafeteria worker, cashier, cook, dietetic clerk, general foodhandler, general kitchen worker, patient tray attendant, sanitation worker, and storeroom worker. The job of each participating employee was classified according to these nine standard jobs by a panel experienced in foodservice management. This procedure provided a base for analysis of research data among the nine hospitals.

Relationships among Criterion Variables

Intercorrelations among the twenty JDS scores were computed. The correlations between job dimension scores (skill variety, task identity, task significance, autonomy, and feedback from the job) were positive, as were the correlations between motivating potential score (MPS), a composite score derived from the five key job dimension scores, and the job dimension scores.

Supervisory rating scores for worker performance and absentee data were negatively correlated. The correlations between absenteeism and performance scores were not strong, but generally as absenteeism decreased, performance scores increased.

Correlations between work performance measures and affective responses to the job also were computed. Supervisory performance ratings and affective responses relationships were all low in strength but positive in direction. Little or no relationship was found between absenteeism and work related satisfaction, either with job content or job contextual factors.

System Results

Comparisons were made between jobs in the conventional and technical systems on the basis of the core job dimensions, critical psychological states, affective responses, and growth need strength. The technical system workers perceived skill variety, task significance, autonomy, job feedback, feedback from agents, dealing with others, and motivating potential to be present in their jobs to a slightly greater extent than did those employed in conventional systems. Differences were not statistically significant, however.

Two critical psychological state scores, experienced meaningfulness of the work and experienced responsibility for the work outcomes, were significantly higher in the technical systems as was one affective response score, internal work motivation. The technical group reported that they found their jobs to be more worthwhile to some set of values they considered important, they felt more personally responsible for the outcomes of the work they performed, and they were more self-motivated than the employees in the conventional systems. The data implied that the technical system jobs may lead to more positive psychological experiences for the job holders than the jobs in the conventional systems.

Changes in the technical subsystem may affect roles and status of the people in the organization. The technical foodservices in this study were systems built into new structures physically removed from a previously conventional foodservice environment. Some of the employees in this study had worked previously in the former system. Work in the new, more technologically advanced system may have contributed to more experienced meaningfulness, experienced responsibility, and internal work

motivation being perceived by the technical system members. Additionally, a contextual advantage gained in the technical systems versus the conventional systems was the scheduling of more routine work hours. Foodservices traditionally schedule work around the meal hours. For some of the workers in the technical systems, hours more closely resembled a common business day with weekends "off duty." The combination of new improved facilities and improved or more desirable working hours may account for some of the higher psychological experiences and internal work motivation in the technical systems.

Job Results

Core Job Dimension Scores by Job

Comparisons by job yielded data that suggested cooks perceived their jobs to have more skill variety and task identity than most of the other job holders did in their jobs. Considering the objective tasks performed by the cooks, these results might be expected because of the variety of skills needed to prepare the variety of items included on a hospital menu.

The dietetic clerks had the second highest skill variety score, which might be expected since this job usually involves an array of tasks concerned with patient meal service, communication with personnel in patient care areas, and maintaining patient diet orders and records. The general kitchen worker's mean score was lowest, reflecting the routine, repetitive nature of the job.

Cooks also had the highest mean task identity score. A cook might prepare a complete menu item or a whole meal. This characteristic of a cook's job could account for the high task identity results for cooks.

Cashiers, general foodhandlers, and storeroom workers also had high task identity scores. The nature of the cashier and storeroom jobs would suggest they complete a "whole task," such as receiving cafeteria revenues and accounting for them or receiving and storing food and supply deliveries. Also, apparently the relatively simple food production performed by the foodhandlers involves completion of a whole task.

Dietetic clerks experienced a higher degree of dealing with others on their jobs than did those in the other job types. Dietetic clerks for this study were involved routinely in receiving information from patient care units and transmitting information to the food production and service units. Such activity required routine and frequent personal contact with other people within the hospital. Dealing with others is, therefore, a likely job characteristic to be experienced by dietetic clerks. A cook, on the other hand, may rarely see or deal with others if he/she spends most of the work time engaged in food preparation tasks.

Cashiers, cooks, dietetic clerks, and storeroom workers had significantly higher motivating potential scores (MPS) than did cafeteria workers, general foodhandlers, general kitchen workers, patient tray attendants, and sanitation workers. The high MPS jobs generally were scored higher on all job dimensions than the low MPS jobs. The exception was the task identity score for dietetic clerks. For all jobs except sanitation worker and general kitchen worker, the dietetic clerks perceived their jobs as not producing whole identifiable products or results. Although the dietetic clerks may deal more with others, it appears that those interactions do not result in tangible work outcomes, as much as a task such as prepreparing vegetables may for the general foodhandler.

Supervisory rating scores for the core job dimensions were compared to the employee ratings for those same dimensions. In every case, the supervisors rated the job dimensions higher than did the employees. Feedback from agents was the one job characteristic rated significantly higher by the supervisors for all jobs studied except cashier. Perhaps the employees were not receiving as much feedback from agents (either supervisors, customers, or co-workers) as their supervisors believed they were; or, perhaps the workers expected more feedback from others than they were getting, whereas supervisors believed feedback was adequate.

Analysis for critical psychological state scores and affective response scores by type of job showed that cashiers experienced significantly more responsibility for the outcomes of their work than did the cafeteria workers, general kitchen workers, and sanitation workers. The personal outcomes of jobs are the affective responses to work, including internal work motivation, general satisfaction, and satisfaction with the contextual factors. Although there were some significant differences between job groups on the basis of the core job dimensions and critical psychological state scores, there were no significant differences between the nine job groups on the basis of affective response scores. For this sample of hospital foodservice workers, job characteristics or job design (enrichment) may have little or no relationship to meeting their needs, because these employees may be working to satisfy lower order needs and are not seeking challenge, growth, or recognition in their work.

Growth need strength for all nine jobs was compared. Dietetic clerks indicated that they had significantly higher growth needs than the other participants in this study. Even though growth need strength is an

individual difference, work of the dietetic clerk may be designed to challenge the job incumbents and thus kindle growth need. Recruitment for dietetic clerks may have separated applicants selectively, however, placing individuals who were desirous of challenging work in those jobs.

Supervisory ratings and absentee data were compared by job group. Sanitation worker performance was rated lowest by supervisors on every performance measure. There may be some "halo" type effect associated with the performance ratings of the supervisors. As skill level and degree of responsibility increased, so did the mean performance rating. Sanitation worker performance may be lower than cook performance or the supervisors may tend to perceive higher work quality from cooks than sanitation workers. The higher skill level jobs, however, require more skilled individuals be employed or trained, and a higher performance would not be unexpected. Also, these jobs would provide more challenge and therefore, would probably lead to higher performance.

The only work outcome measure that showed no significant difference was that of absenteeism; however, the high MPS jobs had somewhat better attendance records than those of the low MPS jobs. Attendance behavior, however, is influenced by a myriad of factors such as the job situation, employee values and expectations, personal characteristics, satisfaction with the job situation, pressure to attend, and also, by factors unrelated to the job such as ability to attend, health, and family problems.

The large number of females, their ages predominantly in the family bearing range, and limited education level of this group of hospital foodservice workers may have influenced their attendance behavior. The implication that the more enriched jobs (cook, cashier, dietetic clerk, and storeroom worker) should lead to better attendance may not be evident

because of the variety of other personal as well as situational influences operating within the environment of these foodservice employees.

JDS Scale Scores by High and Low MPS Jobs

Cashiers, cooks, dietetic clerks, and storeroom workers perceived their jobs to be significantly higher in motivating potential than did the cafeteria workers, general foodhandlers, general kitchen workers, patient tray attendants, and sanitation workers. The job holders in the high MPS jobs also experienced significantly more meaningfulness in their work and significantly more responsibility for the outcomes of the work they performed. The job characteristics theory of motivation would suggest that the high MPS jobs should lead to higher affective responses and more positive work performance than the low MPS jobs for the job holders. Although the affective response scores for the high MPS group were not significantly higher than those for the low MPS group, the trend suggests a tendency for more positive response to high MPS jobs.

Other factors may be moderating the relationship between job design and personal outcomes for these hospital foodservice employees. Both the high and low MPS groups may possess similar desires for pay, job security, socialization opportunities at work, supervision, and opportunity to grow.

Work Performance Between High and Low MPS Jobs

The supervisory ratings of work performance for the high MPS job holders were significantly higher in every category than those for the low MPS job holders. The high MPS group had significantly greater growth need strength which may be translated into higher job performance, or affect performance. Regardless of degree of job related satisfaction experienced by the worker, foodservice jobs that are designed to be more

challenging (cook, dietetic clerk, cashier, and storeroom worker) may result in more positive work performance than less challenging jobs. If sanitation work, general foodhandling tasks, and other routine jobs cannot be designed with more challenge, it may be necessary to reinforce the extrinsic rewards to encourage worker performance in these less desirable activities continually.

Effects of System and Job

The simultaneous effects of system (conventional versus technical) and job type (high MPS versus low MPS) on the critical psychological states, affective responses, and growth need strength were investigated. Employees in the technical systems experienced significantly more meaningfulness in their work, responsibility for the outcomes of their work, and internal work motivation than did the employees in the conventional systems when effects of job type were controlled. The high MPS job holders experienced higher levels of meaningfulness and responsibility for the outcomes of their work, regardless of system type. The technical system employees may experience more meaningfulness, responsibility, and internal work motivation as a result of their training and orientation to the "new" systems prior to moving to the new systems, effects not experienced by workers in the conventional systems.

Mean overall work performance score was highest for the high MPS group in the technical system. The group composed of cashiers, cooks, dietetic clerks, and storeroom workers had the highest performances, regardless of system. Although some jobs may be designed to elicit positive work outcomes for hospital foodservice employees, results suggest that job design alone, however, may not enhance worker performance as

much as the combination of job design and the association of that job with a technically oriented on-site foodservice system. The prestige and improved working conditions associated with the "new" systems may contribute to the positive work performance of the system's members in the high motivating potential jobs.

Tenure by type of system and job was analyzed. The only significant finding was that tenure at hospital, in present job, and in foodservice was higher for the high MPS jobs than for the low MPS jobs. The job an individual holds would be more a function of tenure than type of system within which an individual works.

Outcome Measures by Type of System

Multiple regression analysis revealed differences between the technical and conventional systems for a number of outcome variables, general satisfaction, internal work motivation, pay, security, social, and growth satisfaction, and overall job performance. In general, it appears that:

(1) Experienced meaningfulness of work was a more useful predictor for the conventional than for the technical systems.

(2) Experienced responsibility is important for both types of systems, but not necessarily on the same criteria.

(3) "Would like" growth need strength seemed to be as relevant a predictor for one system as the other.

(4) "Job choice" growth need strength was not relevant for the conventional systems but was relevant as a predictor for two of the eight outcome measures in the technical systems.

(5) Satisfaction can be predicted more accurately than performance ratings; although, satisfaction criteria were more accurately predicted for the conventional than for the technical systems. Performance ratings, however, were more accurately predicted for the technical than for the conventional systems.

Effects of Tenure and Wage

Correlations between tenure and affective response scores were moderate but positive. As tenure increased with this sample of hospital foodservice workers, so did general job satisfaction, and pay, security, and growth satisfaction. As tenure increased, these workers may have become more oriented to their jobs or they may have reduced their expectations, thus finding satisfaction with the job more attainable than did those employed for shorter periods of time. Additionally, the employees maintained their continuous organizational association over time may have done so through a selectivity process. Their personal choices may have influenced the degree of satisfaction they experienced on the job.

Correlations between tenure and work performance measures showed that performance tended to improve with tenure. This tendency may be traced to the foodservice workers perceiving the actual rewards received as more equitable with their expectations the longer they remained with their respective organizations. Additionally, as time passes employees leave organizations for a variety of reasons. Those who remain do so by choice and, therefore, may have committed themselves to be reliable attendees in spite of their degree of job satisfaction or level of performance while on duty.

Tenure, in general, was significantly higher for the high versus the low MPS jobs. These data suggest that given the opportunity to do more enriching tasks foodservice employees will remain with the organization and perform better as well. Additionally, the longer these individuals remain with the organization their personal goals and objectives may become consistent with those of the organization which in turn may be translated into improved work performance.

Correlations between wage rates and affective response scores showed general satisfaction was moderately related to wage rate as was satisfaction with pay. The most significant relationship was between growth satisfaction and wage rates. Higher wages may have been perceived as recognition for personal work accomplishments; therefore, as wages increased the employees may have experienced some satisfaction for their need to grow. Because the high MPS jobs were also the highest paying jobs, the higher wages combined with the more positively designed jobs of cooks, dietetic clerks, cashiers, and storeroom workers may have influenced the positive wage-affective response relationships.

Job Performance Level and Job Type Effects

The effects of job type (high and low MPS jobs) and performance level (high and low rated performance scores) on the affective responses and growth need strength were studied. The data suggested that job type did not have significant effects on the affective responses but does affect "job choice" growth need strength. The interactions of job type and performance level were not significant. The performance level alone appeared to have significantly affected all the affective response scores except pay satisfaction or growth need strength. The high performers

appeared to be significantly more satisfied with all aspects of their jobs except for supervision than the low performers. Performance appeared to lead to satisfaction, not satisfaction leading to performance. The dissatisfaction with supervision may be traced to the contention that as worker performance improves he/she may become more critical of his/her supervisor and may expect more autonomy on the job than the supervisor is willing to permit.

Moderating Effects of Growth Need Strength (GNS)

The moderating effects of individual growth need strength were tested by comparing the relationships of motivating potential scores and outcome measures (overall job performance, general satisfaction, internal work motivation, wage rate, days absent, tenure in organization, and tenure in present job) for the low versus high GNS groups. There were no significant differences between the two groups. GNS did not appear to moderate the relationship between personal and work outcomes, and motivating potential score. Other variables may have moderating effects for this sample of foodservice workers, such as the work context factors, satisfaction with pay, supervision, security, and interpersonal relationships.

Moderating Effects of Work Context Factors

The moderating effect of satisfaction with work context factors on the relationship between MPS and outcome measures was studied. The MPS/overall job performance relationship was significantly higher for those employees who were in the high pay satisfaction group. Job performance may increase most when a job is high in motivating potential and

the worker experiences satisfaction with the pay he/she receives for the work performed.

Similar analyses for the moderating effects of employee growth need strength on the high and low MPS/outcome measures relationship were conducted. The data suggested that growth need strength does not moderate between MPS and outcome measures for this sample of employees, whether the jobs are high or low in motivating potential.

Work Context Satisfaction and Low Versus High MPS Jobs

Relationships between MPS and the outcome measures for high versus low MPS jobs as moderated by satisfaction with work context factors was compared. The results suggested that supervisory satisfaction had a moderating effect on the MPS/work outcome relationship in the high MPS jobs. In the low MPS jobs the only work context satisfaction moderator for the MPS/work outcome measures was social satisfaction. The low MPS employees tended to have more social satisfaction from their jobs the longer they stayed with the organization. The outcome measures of the high and low MPS job holders in these hospital foodservices did not appear to be moderated by satisfaction with the contextual factors of their jobs.

Combined Effects of Growth Need Strength and Work Context

The combined moderating effects of growth need strength and contextual satisfaction on the MPS/outcome measures relationship was studied and found to be limited. The contention that employees with work context satisfaction and high growth need are more responsive to enriched jobs is not substantiated with the results from these foodservice employees.

Conclusions

The overall design of jobs in conventional and highly technical hospital foodservice systems does not appear to differ greatly. The design of specific jobs affected personal and work outcomes regardless of system type. Cashiers, cooks, dietetic clerks, and storeroom workers by design of the behavioral characteristics of their jobs had significantly higher motivating potential scores (MPS) than did cafeteria workers, general foodhandlers, general kitchen workers, patient tray attendants, and sanitation workers. Workers in high MPS jobs showed higher personal and work outcomes than did those in low MPS jobs. In general, however, data favored the highly technical systems for both high and low MPS jobs.

All the systems studied were physically located within the hospitals which they served. The degree of technological sophistication, mass production, and specialization of functions was limited when compared to that usually associated with the large centralized food production facility, or "food factory," which serves several institutions. As more interest grows toward development of food factory systems, the impact of such major environmental changes may have more significant and negative behavioral effects on foodservice personnel than is true in the on-site technically-oriented systems. Research in this area would be valuable in assessing organizational effectiveness in these systems.

REFERENCES

(1) Konz, S.: Work Design. Manhattan: Kansas State Univ., 1977.

(2) Taylor, F.W.: Scientific Management. New York: Harper, 1947.

(3) David, K., and Blomstrom, R.L.: Business and Society: Environment and Society: Environment and Responsibility. 3rd ed. New York: McGraw-Hill, 1975.

(4) Blood, M.R., and Hulin, C.L.: Alienation, environmental characteristics and worker responses. J. Appl. Psy. 51:284, 1967.

(5) Work in America. Report of Special Task Force to Sec. of Health, Educ., and Welfare. Cambridge: Mass. Inst. Tech. Press, 1973.

(6) Walton, R.E.: How to counter alienation in the plant. Harv. Bus. Rev. 50:70 (Nov.-Dec.), 1972.

(7) Scott, W.E., Jr.: Activation theory and task design. Organ. Behav. and Human Perf. 1:3, 1966.

(8) Hulin, C.L.: Individual differences and job enrichment: The case against general treatments. In Maker, J.R., ed.: New Perspectives in Job Enrichment. New York: Van Nostrand Reinhold, 1971.

(9) Hackman, J.R., and Lawler, E.E.: Employee reactions to job characteristics. J. Appl. Psy. 55:259, 1971.

(10) Pierce, J.L., and Dunham, R.B.: The measurement of perceived job characteristics: The job diagnostic survey versus the job characteristics inventory. Acad. of Mgt. J. 21:123, 1978.

(11) Herzberg, F., Mausner, B., and Snyderman, B.: The Motivation to Work. New York: John Wiley & Sons, Inc., 1959.

(12) Hackman, J.R.: On the coming demise of job enrichment. In Cass, E.L., and Zimmer, F.G., eds.: Man and Work in Society. New York: Van Nostrand Reinhold Co., 1975.

(13) Hackman, J.R., and Oldham, G.R.: Motivation through the design of work: Test of a theory. Organ. Behav. and Human Perf. 16:250, 1976.

(14) Swartz, R.S., and Vaden, A.G.: Behavioral science research in hospital foodservice. I. Work values of foodservice employees in urban and rural hospitals. J. Am. Dietet. A. 73:120, 1978.

(15) Martin, P.J., and Vaden, A.G.: Behavioral science research in hospital foodservice. II. Job satisfaction and work values of foodservice employees in large hospitals. J. Am. Dietet. A. 73:127, 1978.

(16) Hopkins, D.E.: Organizational identification, job satisfaction, work values, and job performance of nonmanagerial school foodservice personnel. Unpublished M.S. thesis, Kansas State Univ., 1977.

(17) Calbeck, O.C., Vaden, A.G., and Vaden, R.E.: Cross-occupational analysis of work-related values and satisfactions: Professionals vs. nonprofessionals in hospital dietetic services. J. Am. Dietet. A. (accepted for publication), 1979.

(18) Kast, F.E., and Rosenzweig, J.E.: Organization and Management--A Systems Approach. 3rd ed. New York: McGraw-Hill, Inc., 1979.

(19) Scott, W.G., and Mitchell, T.R.: Organization Theory. Rev. ed. Homewood, Ill.: Richard D. Irwin, Inc., 1972.

(20) Cooper, R., and Foster, M.: Sociotechnical systems. Am. Psy. 26:467, 1971.

(21) Ramo, S.: Cure for Chaos: Fresh Solutions to Social Problems through the Systems Approach. New York: Oavid McKay Company, Inc., 1969.

(22) Mann, F., and Hoffman, L.R.: Automation and the Worker. New York: Holt, Rinehart and Winston, 1960.

(23) Donaldson, B.: Managing change in foodservice operations. J. Am. Dietet. A. 57:335, 1970.

(24) Donaldson, B.: The future in food administration. J. Am. Dietet. A. 46:357, 1965.

(25) Oavid, B.D.: A model for decision making. Hospitals 46:50 (Aug. 1), 1972.

(26) Ostenso, G.L., Moy, W.A., and Donaldson, B.: Developing a generalized cafeteria simulator. J. Am. Dietet. A. 46:379, 1965.

(27) Livingston, G.E.: Food service systems: Food technology in action. Food Tech. 20:76 (May), 1966.

(28) Freshwater, J.F.: Future of food service systems. Cornell Hotel & Rest. Adm. Q. 10:30 (Nov.), 1969.

(29) Berge, D.J., and Nejelski, L.: Administration of food service systems. Cornell Hotel & Rest. Adm. Q. 10:32 (Nov.), 1969.

(30) Beach, B.L., and Ostenso, G.L.: Entree serving times. J. Am. Dietet. A. 54:290, 1969.

(31) Blaker, G., and Donaldson, B.: System analysis--A tool for management. J. Am. Dietet. A. 55:121, 1969.

(32) Donovan, N.: A systems point of view, in the total system concept. Hosp. and Nursing Home Food Mgt. 5:36 (Jan.), 1969.

(33) Gue, R.L.: An introduction to the systems approach in the hospital dietary department. Hospitals 43:100 (Sept. 1), 1969.

(34) Konnersman, P.M.: The dietary department as a logistics system. Hospitals 43:102 (Sept. 1), 1969.

(35) McGary, V.E., and Donaldson, B.: A model of a centralized tray assembly conveyer system for a hospital. J. Am. Dietet. A. 55:366, 1969.

(36) Zolber, K.K., and Donaldson, B.: Distribution of work functions in hospital food systems. J. Am. Dietet. A. 56:39, 1970.

(37) Vaden, A.G.: Application of the systems approach to food service management. Unpublished paper. Kansas State Univ., 1970.

(38) Beyer, C.E., and Buchanan, P.: Developing departmental standards. Cornell Hotel & Rest. Adm. Q. 16:70 (Nov.), 1975.

(39) Food service industry problem identification. In Eshbach, C.E., ed.: Proceedings of the 32nd Conference of the Society for the Advancement of Food Service Research, Houston, Tex. (Oct.), 1976.

(40) Faltermayer, E.: Who will do the dirty work tomorrow? Fortune B9:132 (Jan.), 1974.

(41) Kotschevar, L.H.: Labor shortage intensified by high turnover, low productivity. Hospitals 46:76 (May 1), 1972.

(42) Powers, T.F.: Food service in 1985. Cornell Hotel & Rest. Adm. Q. 17:40 (May), 1975.

(43) Rappole, C.L.: Impact of new model sanitation code ordinance on food service. In Eshbach, C.E., ed.: Proceedings of the 32nd Conference of the Society for the Advancement of Food Service Research, Houston, Tex. (Oct.), 1976.

(44) Greenaway, D.: Future directions for foodservice. In Eshbach, C.E., ed.: Proceedings of the 32nd Conference of the Society for the Advancement of Food Service Research, Houston, Tex. (Oct.), 1976.

(45) The consumer--An increasing force in food service. In Eshbach, C.E., ed.: Proceedings of the 28th Conference of the Society for the Advancement of Food Service Research, Miami Beach, Fla. (May), 1973.

(46) Gallup Surveys. Consumer spending habits--Part I: The evening meal. Food Service Mktg. 37:44 (Jan.), 1975.

(47) Levitt, T.: Production line approach to service. Harv. Bus. Rev. 50:41 (Sept.-Oct.), 1972.

(48) Burley, K.R.: Productivity and performance. In Eshbach, C.E., ed.: Proceedings of the 32nd Conference of the Society for the Advancement of Food Service Research, Houston, Tex. (Oct.), 1976.

(49) Ostenso, G.L.: Concepts of food systems management. In Moore, A.N., and Tuthill, B.H., eds.: Computer-assisted Food Management Systems. Columbia, Missouri: Technical Education Services, 1971.

(50) Sell, W.: New equipment and systems in mass feeding. J. Am. Dietet. A. 63:413, 1973.

(51) Rinke, W.J.: Three major systems reviewed and evaluated. Hospitals 50:73 (Feb. 16), 1976.

(52) Powers, T.F.: Labor supply, payroll costs and changes. Cornell Hotel & Rest. Adm. Q. 15:5 (May), 1974.

(53) Livingston, G.E.: Changes in the food service industry. Cornell Hotel & Rest. Adm. Q. 15:14 (May), 1974.

(54) Shadyside Hospital: Putting foodservice system on ice. Inst./Vol. Feeding 79:29.

(55) Glew, G.: The technology for improved service. Hospitals 47:51 (Nov. 1), 1973.

(56) Millross, J., and Glew, G.: Staff, equipment, and wastage. Hospitals 48:72 (Aug. 16), 1974.

(57) Passmore, F.: A central food production unit. Hospitals 48:68 (Sept. 16), 1974.

(58) Berkman, J.: Cooking in the new age. Food Management 11:40 (Nov.), 1976.

(59) Bjorkman, A., and Delphin, K.A.: Sweden's Nacka hospital food system centralizes preparation and distribution. Cornell Hotel & Rest. Adm. Q. 7:84 (Nov.), 1966.

(60) Broten, P.R.: Progress in "ready foods." Cornell Hotel & Rest. Adm. Q. 15:37 (May), 1974.

(61) Bryan, L., and Fritz, M.: Increase employee productivity and patient satisfaction. Hospitals 50:125 (Oct. 1), 1976.

(62) America's super kitchens: The promises and the problems. Food Mgt. 12:28 (July), 1977.

(63) Roethlisberger, F.J., and Dickson, W.J.: Management and the Worker. New York: John Wiley and Sons, Inc., 1964.

(64) Ivancevich, J.M., and Donnelly, J.H.: Job satisfaction research: A manageable guide for practitioners. Pers. J. 47:172, 1968.

(65) Landy, F.J., and Trumbo, D.A.: Psychology of Work Behavior. Homewood, Ill.: The Dorsey Press, 1976.

(66) Schwab, D.P., and Cummings, L.L.: Theories of performance and satisfaction: A review. Ind. Relat. 9:408, 1970.

(67) Maslow, A.H.: A theory of motivation. Psycol. Rev. 50:370, 1943.

(68) Porter, L.W.: A study of perceived need satisfactions in bottom and middle management jobs. J. Appl. Psy. 45:1, 1961.

(69) Hall, D.T., and Nougaim, K.E.: An examination of Maslow's need hierarchy in an organizational setting. Organ. Behav. and Human Perf. 3:12, 1968.

(70) Herzberg, F.: One more time: How do you motivate employees? Harvard Bus. Rev. 46:53 (Jan.-Feb.), 1968.

(71) Armstrong, T.B.: Job content and context factors related to satisfaction for different occupational levels. J. Appl. Psy. 55:57, 1971.

(72) Starcevich, M.M.: Job factors related to satisfaction and dissatisfaction across different occupational levels. J. Appl. Psy. 56:467, 1972.

(73) Porter, L.W., and Lawler, E.E.: Management Attitudes and Performance. Homewood, Ill.: Irwin-Dorsey, 1968.

(74) Lawler, E.E., and Porter, L.W.: The effect of performance on job satisfaction. Ind. Relat. 7:20, 1967.

(75) Scanlan, B.K.: Determinants of job satisfaction and productivity. Pers. J. 55:12, 1976.

(76) Blood, M.R.: Work values and job satisfaction. J. Appl. Psy. 53:456, 1969.

(77) Mobley, W.H., and Locke, E.A.: The relationship of value importance to satisfaction. Organ. Behav. and Human Perf. 5:463, 1970.

(78) Shepard, J.M.: Functional specialization, alienation, and job satisfaction. Ind. and Labor Relat. Rev. 23:207, 1970.

(79) Smith, F., Roberts, K.H., and Hulin, C.L.: Ten year job satisfaction trends in a stable organization. Acad. Mgt. J. 19:462, 1976.

(80) Organ, D.W.: Inferences about trends in labor force satisfaction: A causal-correlational analysis. Acad. Mgt. J. 20:510, 1977.

(81) Gordon, M.E., and Arvey, R.D.: The relationship between education and satisfaction with job content. Acad. Mgt. J. 18:888, 1975.

(82) Weaver, C.N.: Relationships among pay, race, sex, occupational prestige, supervision, work autonomy, and job satisfaction in a national sample. Pers. Psy. 30:437, 1977.

(83) Weaver, C.N.: Occupational prestige as a factor in the net relationship between occupation and job satisfaction. Pers. Psy. 30:607, 1977.

(84) Weaver, C.N., and Howe, R.C.: Comparing the job satisfaction of supervisors and workers with hierarchical levels above and beneath partially controlled. Paper presented at the Southwest Div. of Acad. of Mgt. Dallas, Tex., 1978.

(85) Near, J.P., Rice, R.W., and Hunt, R.G.: Work and extra-work correlates of life and job satisfaction. Acad. Mgt. J. 21:248, 1978.

(86) Schneider, B., and Olson, L.K.: Effort as a correlate of organizational reward system and individual values. Pers. Psy. 23:313, 1970.

(87) Sims, H.P., and Szilagyi, A.D.: Leader and reward behavior and subordinate satisfaction and performance. In Bedeian, A.G., Armenakis, A.A., Holley, W.H., and Feild, H.S., eds.: Proceedings of the 35th Annual Meeting of Academy of Management, New Orleans, La., 1975.

(88) Palola, E.G., and Larson, W.R.: Some dimensions of job satisfaction among hospital personnel. Sociol. and Soc. Res. 49:201, 1965.

(89) Logan, N., O'Reilly, C., and Roberts, K.: Job satisfaction among part-time and full-time employees. J. of Voc. Behav. 3:33, 1973.

(90) Harwood, V.E., and Brown, H.I.: Labor turnover in hospital dietary departments. J. Am. Dietet. A. 53:348, 1968.

(91) Puls, J. McE., Moore, A.N., Tuthill, B.H., and Hefferman, W.D.: Orientation program increased job satisfaction and stability. J. Am. Dietet. A. 65:46, 1974.

(92) Griffith, R.T., Moore, A.N., and Krause, G.F.: Effect on turnover of training foodservice employees. J. Am. Dietet. A. 65:43, 1974.

(93) Knickrehm, M.E., and Wertz, R.A.D.: Personal history and job tenure of dietary employees. J. Am. Dietet. A. 66:34, 1975.

(94) Flowers, V.S., and Hughes, C.L.: Why employees stay. Harv. Bus. Rev. 51:49 (Jul.-Aug.), 1973.

(95) Sirota, D., and Wolfson, A.D.: Job enrichment: What are the obstacles? Personnel 49:8 (May), 1972.

(96) Hulin, C.L., and Blood, M.R.: Job enlargement, individual differences, and worker responses. Psychol. Bull. 69:41, 1968.

(97) Robey, D.: Task design, work values, and worker response: An experimental test. Organ. Behav. and Human Perf. 12:261, 1974.

(98) Castellano, J.J.: Rural and urban differences: One more time. Acad. Mgt. J. 19:495, 1976.

(99) Stone, E.F.: The moderating effect of work-related values on the job scope-job satisfaction relationship. Organ. Behav. and Human Perf. 15:147, 1976.

(100) Whitsett, D.A.: Where are your unenriched jobs? Harv. Bus. Rev. 53:74 (Jan.-Feb.), 1975.

(101) Walton, R.E.: From Hawthorne to Topeka and Kalmar. In Cass, E.L., and Zimmer, F.G., eds.: Man and Work in Society. New York: Van Nostrand Reinhold Co., 1975.

(102) Yorks, L.: A Radical Approach to Job Enrichment. New York: AMACOM, 1976.

(103) Chartrand, P.J.: Job redesign--Progress or pipedream? Bus. Q. 41(4):65, 1976.

(104) Budd, J.M.: Employee motivation through job enrichment. J. Systems Mgt. 25:34, 1974.

(105) Copenhaver, J.R.: Training, job enrichment reduce costs. Hospitals 47:118 (Feb. 1), 1973.

(106) Powers, J.E.: Job enrichment: How one company overcame the obstacles. Personnel 49:18 (May-June), 1972.

(107) Robinson, J.F.: Job enrichment: What it is. Super. Mgt. 18:2 (Sept.), 1973.

(108) Velghe, J.C., and Cockrell, G.: What makes Johnny mop? Pers. J. 54:324, 1975.

(109) Lawler, E.E., III, and Hall, D.T.: Relationship of job characteristics to job involvement, satisfaction, and intrinsic motivation. J. Appl. Psy. 54:305, 1970.

(110) Brief, A.P., and Aldag, R.J.: Employee reactions to job characteristics: A constructive replication. J. Appl. Psy. 60:182, 1975.

(111) Wanous, J.: Individual differences and reactions to job characteristics. J. Appl. Psy. 59:616, 1974.

(112) Frank, L.L., and Hackman, J.R.: A failure of job enrichment: The case of the change that wasn't. J. Appl. Behav. Sci. 11:413, 1975.

(113) Locke, E.A., Sirota, D., and Wolfson, A.D.: An experimental case study of the success and failures of job enrichment in a government agency. J. Appl. Psy. 61:701, 1976.

(114) Umstot, D., Bell, C., and Mitchell, T.: Effects of job enrichment and task goals on satisfaction and productivity: Implications for job design. J. Appl. Psy. 61:379, 1976.

(115) Turner, A.N., and Lawrence, P.R.: Industrial Jobs and the Worker. Cambridge, Mass.: Harv. Graduate School of Bus., 1965.

(116) Hackman, J.R., Oldham, G.R., Janson, R., and Purdy, K.: A new strategy for job enrichment. Calif. Mgt. Rev. 17(4):57, 1975.

(117) Hackman, J.R., and Oldham, G.R.: The job diagnostic survey: An instrument for the diagnosis of jobs and the evaluation of job redesign projects. Technical Report No. 4, Dept. of Admin. Sciences, Yale Univ., 1974.

(118) Baird, L.S.: Relationship of performance to satisfaction in stimulating and nonstimulating jobs. J. Appl. Psy. 61:721, 1976.

(119) Katz, R.: Job longevity as a situational factor in job satisfaction. Admin. Sci. Q. 23:204, 1978.

(120) Oldham, G., Hackman, J., and Pearce, J.: Conditions under which employees respond positively to enriched work. J. Appl. Psy. 61:395, 1976.

(121) Dunham, R.: Reactions to job characteristics: Moderating effects of the organization. Acad. Mgt. J. 20:42, 1977.

(122) Griffin, R.W., and Chonko, L.B.: Employee preferences for job characteristics. In Taylor, R.L., O'Connell, M.J., Zawacki, R.A., and Warrick, D.D., eds.: Proceedings of the 37th Annual Meeting of the Academy of Management, Orlando, Fla., 1977.

(123) Kidron, A.G.: Individual characteristics as moderators of the job characteristic-satisfaction relationship. In Taylor, R.L., D'Connell, M.J., Zawacki, R.A., and Warrick, D.D., eds.: Proceedings of the 37th Annual Meeting of the Academy of Management, Orlando, Fla., 1977.

(124) Umstot, D.D., Mitchell, T.R., and Bell, C.H.: Goal setting and job enrichment: An integrated approach to job design. Acad. Mgt. R. 867: (Oct.), 1978.

(125) Sims, H.P., Jr., Szilagyi, A.D., and Keller, R.T.: The measurement of job characteristics. Acad. of Mgt. J. 19:195, 1976.

(126) Keller, R.T., Szilagyi, A.D., and Holland, W.E.: Job characteristics of research and development personnel: Relationships with satisfaction and role variables. In Bedeian, A.G., Armenakis, A.A., Holley, W.H., and Feild, H.S., eds.: Proceedings of the 35th Annual Meeting of the Academy of Management, New Orleans, La., 1975.

(127) Pierce, J.L., and Dunham, R.B.: Task design: A literature review. Acad. Mgt. Rev. 1:83, 1976.

(128) Taber, T.D., Beehr, T.A., and Walsh, J.T.: The relationship between objective and perceived job characteristics. In Susbauer, J.C., ed.: Proceedings of the 38th Annual Meeting of the Academy of Management, San Francisco, Calif., 1978.

(129) Bobeng, B.J.: Job enrichment in job design. J. Am. Dietet. A. 70:251, 1977.

(130) Billings, R.S., Klimoski, R.J., and Breaugh, J.A.: The impact of a change in technology on job characteristics: A quasi-experiment. Admin. Sci. Q. 22:318, 1977.

(131) U.S. Employment Service: Dictionary of Occupational Titles. 3rd ed. Washington, D.C.: U.S. Govt. Printing Office, 1965.

(132) Gosman, M.L., and Krishnamurty, G.B.: Occupational analysis: Hospital food service department. Allied Health Professions Project, Div. of Voc. Educ., Univ. of Calif. L.A., 1975.

(133) Nie, N.H., Hull, C.H., Jenkins, J.G., Steinbrinner, K., and Bent, D.H.: Statistical Package for the Social Sciences. 2nd ed. New York: McGraw-Hill Book Co., 1975.

(134) Kemp, K.E.: Least squares analysis of variance, a procedure, a program, and examples of their use. Research Paper 7. Contribution 168. Dept. of Statistics and the Statistical Laboratory, Ks. Agric. Exp. Sta., Ks. State U., 1972.

(135) Barr, A.J., Goodnight, J.H., Sall, J.P., and Helwig, J.T.: A User's Guide to SAS. Raleigh, N.C.: SAS Institute, Inc., 1976.

(136) Graybill, F.: Theory and Application of the Linear Model. N. Scituate, Mass.: Duxbury Press, 1976.

(137) Staw, B.M., and Oldham, G.R.: Reconsidering our dependent variables: A critique and empirical study. Acad. of Mgt. J. 21:539, 1978.

(138) Steers, R.M., and Rhodes, S.R.: Major influences on employee attendance: A process model. J. Appl. Psy. 63:391, 1978.

APPENDIXES

APPENDIX A

Job Diagnostic Survey

Department of Dietetics, Restaurant
and Insiitutional Management
Justin Hall
Manhattan, Kansas 66506
Phone: 913 532-5521-2

JOB DIAGNOSTIC SURVEY

This questionnaire was developed at Yale University to study jobs and how people react to them. We are using it to study the design of jobs in hospital foodservices.

On the following pages you will find several different kinds of questions about your job. Specific instructions are given at the start of each section. Please read them carefully. It should take no more than 25 minutes to complete the entire questionnaire. Please move through it quickly.

The questions are designed to obtain your perceptions of your job and your reactions to it.

There are no "trick" questions. Your individual answers will be kept completely confidential. Please answer each item as honestly and frankly as possible.

Thank you for your cooperation.

1

SECTION I

This part of the questionnaire asks you to describe your job, as objectively as you can.

Please do not use this part of the questionnaire to show how much you like or dislike your job. Questions about that will come later. Instead, try to make your descriptions as accurate and as objective as you possibly can.

A sample question is given below.

A. To what extent does your job require you to work with mechanical equipment?

1----------2----------3----------4----------5----------(6)----------7

Very little; the job requires almost no contact with mechanical equipment of any kind.

Moderately

Very much; the job requires almost constant work with mechanical equipment

You are to circle the number which is the most accurate description of your job.

If, for example, your job requires you to work with mechanical equipment a good deal of the time--but also requires some paperwork--you might circle the number six, as was done in the example above.

If you do not understand these instructions, please ask for assistance. If you do understand them, please begin.

---

1. To what extent does your job require you to work closely with other people (either clients, or people in related jobs in your own organization)?

1----------2----------3----------4----------5----------6----------7

Very little; dealing with other people is not at all necessary in doing the job.

Moderately; some dealing with others is necessary

Very much; dealing with other people is an absolutely essential and crucial part of doing the job.

2. How much autonomy is there in your job? That is, to what extent does your job permit you to decide on your own how to go about doing the work?

1----------2----------3----------4----------5----------6----------7

Very little; the job gives me almost no personal "say" about how and when the work is done.

Moderate autonomy; many things are standardized and not under my control, but I can make some decisions about the work.

Very much; the job gives me almost complete responsibility for deciding how and when the work is done.

2

3. To what extent does your job involve doing a "whole" and identifiable piece of work? That is, is the job a complete piece of work that has an obvious beginning and end? Or is it only a small part of the overall piece of work, which is finished by other people or by automatic machines?

1----------2----------3----------4----------5----------6----------7

My job is only a tiny part of the overall piece of work; the results of my activities cannot be seen in the final product or service.

My job is a moderate-sized "chunk" of the overall piece of work; my own contribution can be seen in the final outcome.

My job involves doing the whole piece of work, from start to finish; the results of my activities are easily seen in the final product or service.

4. How much variety is there in your job? That is, to what extent does the job require you to do many different things at work, using a variety of your skills and talents?

1----------2----------3----------4----------5----------6----------7

Very little; the job requires me to do the same routine things over and over again.

Moderate variety

Very much; the job requires me to do many different things, using a number of different skills and talents.

5. In general, how significant or important is your job? That is, are the results of your work likely to significantly affect the lives or well-being of other people?

1----------2----------3----------4----------5----------6----------7

Not very significant; the outcomes of my work are not likely to have important effects on other people.

Moderately significant.

Highly significant; the outcomes of my work can affect other people in very important ways.

6. To what extent do managers or co-workers let you know how well you are doing on your job?

1----------2----------3----------4----------5----------6----------7

Very little; people almost never let me know how well I am doing.

Moderately; sometimes people may give me "feedback"; other times they may not.

Very much; managers or co-workers provide me with almost constant "feedback" about how well I am doing.

7. To what extent does doing the job itself provide you with information about your work performance? That is, does the actual work itself provide clues about how well you are doing--aside from any "feedback" co-workers or supervisors may provide?

1----------2----------3----------4----------5----------6----------7

Very little; the job itself is set up so I could work forever without finding out how well I am doing.

Moderately; sometimes doing the job provides "feedback" to me; sometimes it does not

Very much; the job is set up so that I get almost constant "feedback" as I work about how well I am doing.

3

SECTION II

Listed below are a number of statements which could be used to describe a job.

You are to indicate whether each statement is an accurate or an inaccurate description of your job.

Once again, please try to be as objective as you can in deciding how accurately each statement describes your job--regardless of whether you like or dislike your job.

Write a number in the blank beside each statement, based on the following scale:

How accurate is the statement in describing your job?

1	2	3	4	5	6	7
Very Inaccurate	Mostly Inaccurate	Slightly Inaccurate	Uncertain	Slightly Accurate	Mostly Accurate	Very Accurate

____ 1. The job requires me to use a number of complex or high-level skills.

____ 2. The job requires a lot of cooperative work with other people.

____ 3. The job is arranged so that I do not have the chance to do an entire piece of work from beginning to end.

____ 4. Just doing the work required by the job provides many chances for me to figure out how well I am doing.

____ 5. The job is quite simple and repetitive.

____ 6. The job can be done adequately by a person working alone--without talking or checking with other people.

____ 7. The supervisors and co-workers on this job almost never give me any "feedback" about how well I am doing in my work.

____ 8. This job is one where a lot of other people can be affected by how well the work gets done.

____ 9. The job denies me any chance to use my personal initiative or judgment in carrying out the work.

____10. Supervisors often let me know how well they think I am performing the job.

____11. The job provides me the chance to completely finish the pieces of work I begin.

____12. The job itself provides very few clues about whether or not I am performing well.

____13. The job gives me considerable opportunity for independence and freedom in how I do the work.

____14. The job itself is not very significant or important in the broader scheme of things.

4

SECTION III

Now please indicate how you personally feel about your job.

Each of the statements below is something that a person might say about his or her job. You are to indicate your own, personal feelings about your job by marking how much you agree with each of the statements.

Write a number in the blank for each statement, based on this scale:

How much do you agree with the statement?

1 Disagree Strongly	2 Disagree	3 Disagree Slightly	4 Neutral	5 Agree Slightly	6 Agree	7 Agree Strongly

____1. It's hard, on this job, for me to care very much about whether or not the work gets done right.

____2. My opinion of myself goes up when I do this job well.

____3. Generally speaking, I am very satisfied with this job.

____4. Most of the things I have to do on this job seem useless or trivial.

____5. I usually know whether or not my work is satisfactory on this job.

____6. I feel a great sense of personal satisfaction when I do this job well.

____7. The work I do on this job is very meaningful to me.

____8. I feel a very high degree of personal responsibility for the work I do on this job.

____9. I frequently think of quitting this job.

____10. I feel bad and unhappy when I discover that I have performed poorly on this job.

____11. I often have trouble figuring out whether I'm doing well or poorly on this job.

____12. I feel I should personally take the credit or blame for the results of my work on this job.

____13. I am generally satisfied with the kind of work I do in this job.

____14. My own feelings generally are not affected much one way or the other by how well I do on this job.

____15. Whether or not this job gets done right is clearly my responsibility.

SECTION IV

Now please indicate how satisfied you are with each aspect of your job listed below. Once again, write the appropriate number in the blanks beside each statement.

How satisfied are you with this aspect of your job?

1	2	3	4	5	6	7
Extremely Dissatisfied	Dissatisfied	Slightly Dissatisfied	Neutral	Slightly Satisfied	Satisfied	Extremely Satisfied

_____ 1. The amount of job security I have.

_____ 2. The amount of pay and fringe benefits I receive.

_____ 3. The amount of personal growth and development I get in doing my job.

_____ 4. The people I talk to and work with on my job.

_____ 5. The degree of respect and fair treatment I receive from my boss.

_____ 6. The feeling of worthwhile accomplishment I get from doing my job.

_____ 7. The chance to get to know other people while on the job.

_____ 8. The amount of support and guidance I receive from my supervisor.

_____ 9. The degree to which I am fairly paid for what I contribute to this organization.

_____ 10. The amount of independent thought and action I can exercise in my job.

_____ 11. How secure things look for me in the future in this organization.

_____ 12. The chance to help other people while at work.

_____ 13. The amount of challenge in my job.

_____ 14. The overall quality of the supervision I receive in my work.

SECTION V

Now please think of the other people in your organization who hold the same job you do. If no one has exactly the same job as you, think of the job which is most similar to yours.

Please think about how accurately each of the statements describes the feelings of those people about the job.

It is quite all right if your answers here are different from when you described your own reactions to the job. Often different people feel quite differently about the same job.

Once again, write a number in the blank for each statement, based on this scale:

How much do you agree with the statement?

1 Disagree Strongly	2 Disagree	3 Disagree Slightly	4 Neutral	5 Agree Slightly	6 Agree	7 Agree Strongly

_____ 1. Most people on this job feel a great sense of personal satisfaction when they do the job well.

_____ 2. Most people on this job are very satisfied with the job.

_____ 3. Most people on this job feel that the work is useless or trivial.

_____ 4. Most people on this job feel a great deal of personal responsibility for the work they do.

_____ 5. Most people on this job have a pretty good idea of how well they are performing their work.

_____ 6. Most people on this job find the work very meaningful.

_____ 7. Most people on this job feel that whether or not the job gets done right is clearly their own responsibility.

_____ 8. People on this job often think of quitting.

_____ 9. Most people on this job feel bad or unhappy when they find that they have performed the work poorly.

_____10. Most people on this job have trouble figuring out whether they are doing a good or a bad job.

7

SECTION VI

Listed below are a number of characteristics which could be present on any job. People differ about how much they would like to have each one present in their own jobs. We are interested in learning how much you personally would like to have each one present in your job.

Using the scale below, please indicate the degree to which you would like to have each characteristic present in your job.

NOTE: The numbers on this scale are different from those used in previous scales.

4	5	6	7	8	9	10
Would like having this only a moderate amount (or less)			Would like having this very much			Would like having this extremely much

_____ 1. High respect and fair treatment from my supervisor.

_____ 2. Stimulating and challenging work.

_____ 3. Chances to exercise independent thought and action in my job.

_____ 4. Great job security.

_____ 5. Very friendly co-workers.

_____ 6. Opportunities to learn new things from my work.

_____ 7. High salary and good fringe benefits.

_____ 8. Opportunities to be creative and imaginative in my work.

_____ 9. Quick promotions.

_____ 10. Opportunities for personal growth and development in my job.

_____ 11. A sense of worthwhile accomplishment in my work.

8

SECTION VII

People differ in the kinds of jobs they would most like to hold. The questions in this section give you a chance to say just what it is about a job that is most important to you.

For each question, two different kinds of jobs are briefly described. You are to indicate which of the jobs you personally would prefer--if you had to make a choice between them.

In answering each question, assume that everything else about the jobs is the same. Pay attention only to the characteristics actually listed.

Two examples are given below.

JOB A				JOB B
A job requiring work with mechanical equipment most of the day				A job requiring work with other people most of the day
1	2	(3)	4	5
Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

If you like working with people and working with equipment equally well, you would circle the number 3, as has been done in the example.

* * * * *

Here is another example. This one asks for a harder choice--between two jobs which both have some undesirable features.

JOB A				JOB B
A job requiring you to expose yourself to considerable physical danger.				A job located 200 miles from your home and family.
1	(2)	3	4	5
Strongly Prefer A	Slightly Prefer A	Neutral	Slightly Prefer B	Strongly Prefer B

If you would slightly prefer risking physical danger to working far from your home, you would circle number 2, as has been done in the example.

Please ask for assistance if you do not understand exactly how to do these questions.

9

	JOB A				JOB B
1.	A job where the pay is very good.				A job where there is considerable opportunity to be creative and innovative.
	1 Strongly Prefer A	2 Slightly Prefer A	3 Neutral	4 Slightly Prefer B	5 Strongly Prefer B

	JOB A				JOB B
2.	A job where you are often required to make important decisions.				A job with many pleasant people to work with.
	1 Strongly Prefer A	2 Slightly Prefer A	3 Neutral	4 Slightly Prefer B	5 Strongly Prefer B

	JOB A				JOB B
3.	A job in which greater responsibility is given to those who do the best work.				A job in which greater responsibility is given to loyal employees who have the most seniority.
	1 Strongly Prefer A	2 Slightly Prefer A	3 Neutral	4 Slightly Prefer B	5 Strongly Prefer B

	JOB A				JOB B
4.	A job in an organization which is in financial trouble--and might have to close down within the year.				A job in which you are not allowed to have any say whatever in how your work is scheduled, or in the procedures to be used in carrying it out.
	1 Strongly Prefer A	2 Slightly Prefer A	3 Neutral	4 Slightly Prefer B	5 Strongly Prefer B

	JOB A				JOB B
5.	A very routine job.				A job where your co-workers are not very friendly.
	1 Strongly Prefer A	2 Slightly Prefer A	3 Neutral	4 Slightly Prefer B	5 Strongly Prefer B

	JOB A				JOB B
6.	A job with a supervisor who is often very critical of you and your work in front of other people.				A job which prevents you from using a number of skills that you worked hard to develop.
	1 Strongly Prefer A	2 Slightly Prefer A	3 Neutral	4 Slightly Prefer B	5 Strongly Prefer B

10

	JOB A				JOB B
7.	A job with a supervisor who respects you and treats you fairly.				A job which provides constant opportunities for you to learn new and interesting things.
	1 Strongly Prefer A	2 Slightly Prefer A	3 Neutral	4 Slightly Prefer B	5 Strongly Prefer B

	JOB A				JOB B
8.	A job where there is a real chance you could be laid off.				A job with very little chance to do challenging work.
	1 Strongly Prefer A	2 Slightly Prefer A	3 Neutral	4 Slightly Prefer B	5 Strongly Prefer B

	JOB A				JOB B
9.	A job in which there is a real chance for you to develop new skills and advance in the organization.				A job which provides lots of vacation time and an excellent fringe benefit package.
	1 Strongly Prefer A	2 Slightly Prefer A	3 Neutral	4 Slightly Prefer B	5 Strongly Prefer B

	JOB A				JOB B
10.	A job with little freedom and independence to do your work in the way you think best.				A job where the working conditions are poor.
	1 Strongly Prefer A	2 Slightly Prefer A	3 Neutral	4 Slightly Prefer B	5 Strongly Prefer B

	JOB A				JOB B
11.	A job with very satisfying team-work.				A job which allows you to use your skills and abilities to the fullest extent.
	1 Strongly Prefer A	2 Slightly Prefer A	3 Neutral	4 Slightly Prefer B	5 Strongly Prefer B

	JOB A				JOB B
12.	A job which offers little or no challenge.				A job which requires you to be completely isolated from co-workers.
	1 Strongly Prefer A	2 Slightly Prefer A	3 Neutral	4 Slightly Prefer B	5 Strongly Prefer B

11

SECTION VIII

Biographical Background

1. Sex:

   ____ (1) Male

   ____ (2) Female

2. Age (check one):

   ____ (1) under 20 ____ (4) 40-49

   ____ (2) 20-29 ____ (5) 50-59

   ____ (3) 30-39 ____ (6) 60 or over

3. Educetion (check one):

   ____ (1) Grade School

   ____ (2) Some High School

   ____ (3) High School Diploma

   ____ (4) Some Business College or Technical School Experience

   ____ (5) Some College Experience (other than business or technical school)

   ____ (6) Business College or Technical School Degree

   ____ (7) College Degree

   ____ (8) Some Graduate Work

   ____ (9) Master's or higher degree

4. Whet is your brief job title? _____

5. Bests of employment

   (e) ____ (1) Full Time

   ____ (2) Part Time

   (b) Usual number of hours worked per week _____

6. How long heve you been employed by this hospital foodservice?

   _____ years _____ months

7. How long have you had your present job?

   _____ years _____ months

8. How long have you worked in fcodservice?

   _____ years _____ months

9. In whet size community do you presently live?

   ____ (1) Big city (over 150,000) for example, Kansas City or Omaha

   ____ (2) Medium city (25,000-149,999) for example, Leavenworth, KS or Grand Island, NE

   ____ (3) Small city (2,500-24,999) for example, Olethe, KS or Beatrice, NE

   ____ (4) Rural community (less than 2,500)

10. In what size community did you spend most of your childhood?

    ____ (1) Big city (over 150,000) for example, Kansas City or Omaha

    ____ (2) Medium city (25,000-149,999) for example, Leavenworth, KS or Grand Island, NE

    ____ (3) Small city (2,500-24,999) for example, Olethe, KS or Beatrice, NE

    ____ (4) Rural community (less than 2,500)

11. Please use this space for any comments you would like to make either about the questionnaire or your job.

APPENDIX B

Job Rating Form

JOB DIAGNOSTIC SURVEY

JOB RATING FORM

This questionnaire was developed as part of a Yale University study of jobs and how people react to them. We are using it to study the design of jobs in hospital foodservices.

You are asked to rate the characteristics of the following job:

_____

Please keep in mind that the questions refer to the job listed above, and not to your own job.

On the following pages, you will find several different kinds of questions about the job listed above. Specific instructions are given at the start of each section. Please read them carefully. It should take you no more than 10 minutes to complete the entire questionnaire. Please move through it quickly.

First, we would like to have some information about you.

General Information

1. Name: _____

2. What is your own job title? _____

3. To whom do you report (name and title) _____
   name title

4. What is your age? (Check one)

   ___ under 20 ___ 40-49

   ___ 20-29 ___ 50-59

   ___ 30-39 ___ 60 or over

5. How long have you been in your present position? (Check one)

   ___ 0-1/2 yr. ___ 3-5 yrs.

   ___ 1/2-1 yr. ___ 5-10 yrs.

   ___ 1-2 yrs. ___ 10 or more yrs.

6. How long have you worked in foodservice?

   _____ _____
   years months

After you have completed the form, in the space below please write down any additional information about the job you supervise which you feel might be helpful to us in understanding that job.

Thank you for your cooperation!

SECTION I

This part of the questionnaire asks you to describe the job listed on the front page as objectively as you can. Try to make your descriptions as accurate and as objective as you possibly can.

A sample question is given below.

A. To what extent does the job require a person to work with mechanical equipment?

1----------2----------3----------4----------5----------(6)----------7

Very little; the job requires almost no contact with mechanical equipment of any kind.

Moderately

Very much; the job requires almost constant work with mechanical equipment

You are to circle the number which is the most accurate description of the job listed on the front page.

If, for example, the job requires a person to work with mechanical equipment a good deal of the time--but also requires some paperwork--you might circle the number six, as was done in the example above.

---

1. To what extent does the job require a person to work closely with other people (either "client," or people in related jobs in the organization)?

1----------2----------3----------4----------5----------6----------7

Very little; dealing with other people is not at all necessary in doing the job.

Moderately; some dealing with others is necessary.

Very much; dealing with other people is an absolutely essential and crucial part of doing the job.

2. How much autonomy is there in the job? That is, to what extent does the job permit a person to decide on his or her own how to go about doing the work?

1----------2----------3----------4----------5----------6----------7

Very little; the job gives a person almost no personal "say" about how and when the work is done.

Moderate autonomy; many things are standardized and not under the control of the person, but he or she can make some decisions about the work.

Very much; the job gives the person almost complete responsibility for deciding how and when the work is done.

3. To what extent does the job involve doing a "whole" and identifiable piece of work? That is, is the job a complete piece of work that has an obvious beginning and end? Or is it only a small part of the overall piece of work, which is finished by other people or by automatic machines?

1----------2----------3----------4----------5----------6----------7

The job is only a tiny part of the overall piece of work; the results of the person's activities cannot be seen in the final product or service.

The job is a moderate-sized "chunk" of the overall piece of work; the person's own contribution can be seen in the final outcome.

The job involves doing the whole piece of work, from start to finish; the results of the person's activities are easily seen in the final product or service.

4. How much variety is there in the job? That is, to what extent does the job require a person to do many different things at work, using a variety of his or her skills and talents?

1----------2----------3----------4----------5----------6----------7

Very little; the job requires the person to do the same routine things over and over again.

Moderate variety.

Very much; the job requires the person to do many different things, using a number of different skills and talents.

5. In general, how significant or important is the job? That is, are the results of the person's work likely to significantly affect the lives or well-being of other people?

1----------2----------3----------4----------5----------6----------7

Not at all significant; the outcomes of the work are not likely to affect anyone in any important way.

Moderately significant.

Highly significant; the outcomes of the work can affect other people in very important ways.

6. To what extent do managers or co-workers let the person know how well he or she is doing on the job?

1----------2----------3----------4----------5----------6----------7

Very little; people almost never let the person know how well he or she is doing.

Moderately; sometimes people may give the person "feedback"; other times they may not.

Very much; managers or co-workers provide the person with almost constant "feedback" about how well he or she is doing.

7. To what extent does doing the job itself provide the person with information about his or her work performance? That is, does the actual work itself provide clues about how well the person is doing--aside from any "feedback" co-workers or supervisors may provide?

1----------2----------3----------4----------5----------6----------7

Very little; the job itself is set up so a person could work forever without finding out how well he or she is doing.

Moderately; sometimes doing the job provides "feedback" to the person; sometimes it does not.

Very much; the job is set up so that a person gets almost constant "feedback" as he or she works about how well he or she is doing.

4

SECTION II

Listed below are a number of statements which could be used to describe a job.

You are to indicate whether each statement is an accurate or an inaccurate description of the job listed on the front page.

Once again, please try to be as objective as you can in deciding how accurately each statement describes the job--regardless of your own feelings about that job.

Write a number in the blank beside each statement, based on the following scale:

How accurate is the statement in describing the job listed on the front page?

1	2	3	4	5	6	7
Very Inaccurate	Mostly Inaccurate	Slightly Inaccurate	Uncertain	Slightly Accurate	Mostly Accurate	Very Accurate

_____ 1. The job requires a person to use a number of complex or sophisticated skills.

_____ 2. The job requires a lot of cooperative work with other people.

_____ 3. The job is arranged so that a person does not have the chance to do an entire piece of work from beginning to end.

_____ 4. Just doing the work required by the job provides many chances for a person to figure out how well he or she is doing.

_____ 5. The job is quite simple and repetitive.

_____ 6. The job can be done adequately by a person working alone--without talking or checking with other people.

_____ 7. The supervisors and co-workers on this job almost never give a person any "feedback" about how well he or she is doing the work.

_____ 8. This job is one where a lot of other people can be affected by how well the work gets done.

_____ 9. The job denies a person any chance to use his or her personal initiative or discretion in carrying out the work.

_____10. Supervisors often let the person know how well they think he or she is performing the job.

_____11. The job provides a person with the chance to finish completely any work he or she starts.

_____12. The job itself provides very few clues about whether or not the person is performing well.

_____13. The job gives a person considerable opportunity for independence and freedom in how he or she does the work.

_____14. The job itself is not very significant or important in the broader scheme of things.

APPENDIX C

Performance Evaluation Form

KSU KANSAS STATE UNIVERSITY

Department of Dietetics, Restaurant and Institutional Management
Justin Hall
Manhattan, Kansas 66506
Phone: 913 532-5521-2

I.D. Number _____

PERFORMANCE EVALUATION OF HOSPITAL PERSONNEL

	1 Unsatis-factory	2 Needs Improvement	3 Satis-factory	4 Above Average	5 Superior
1. Quality of Work					
a. Accuracy	( )	( )	( )	( )	( )
b. Neatness	( )	( )	( )	( )	( )
c. Organization of work	( )	( )	( )	( )	( )
d. Thoroughness	( )	( )	( )	( )	( )
2. Quantity of Work					
a. Amount of work performed	( )	( )	( )	( )	( )
b. Completion of work on schedule	( )	( )	( )	( )	( )
c. Consistency of work production	( )	( )	( )	( )	( )
3. Following Directions					
a. Compliance with work instructions	( )	( )	( )	( )	( )
b. Observance of rules and regulations	( )	( )	( )	( )	( )
c. Care and use of equipment	( )	( )	( )	( )	( )
d. Observance of safety rules	( )	( )	( )	( )	( )
4. Initiative and Judgment					
a. Use of initiative	( )	( )	( )	( )	( )
b. Use of judgment	( )	( )	( )	( )	( )
c. Adapting to new situations, unusual demands or emergencies	( )	( )	( )	( )	( )
5. Attendance					
a. Punctuality	( )	( )	( )	( )	( )
b. Regularity of attendance	( )	( )	( )	( )	( )
6. Personal Relations					
a. Getting along with other employees	( )	( )	( )	( )	( )
b. Meeting and handling the public	( )	( )	( )	( )	( )
c. Attention to personal appearance, cleanliness, hygenic measures	( )	( )	( )	( )	( )

7. Other factors:

	1 Not Applicable	2 Low	3 Medium	4 High
a. Employee's loyalty to the hospital foodservice	( )	( )	( )	( )
b. Employee's loyalty to his/her job	( )	( )	( )	( )

	Satisfied	Neutral	Dissatisfied
c. In general, how satisfied do you believe this person is with his/her rewards for his/her efforts?	( )	( )	( )
d. In general, how satisfied do you believe this person is with his/her position in the organization?	( )	( )	( )

APPENDIX D

Letter of Request

Department of Dietetics, Restaurant
and Institutional Management
Justin Hall
Manhattan, Kansas 66506
Phone: 913 532-5521-2

February 14, 1978

Mr. Richard Jack
Regional Vice-President
ARA Food Services Co.
Midwest Area
10100 Santa Fe Drive, Suite 101
Overland Park, Kansas 66212

Dear Mr. Jack:

This letter is to follow-up our conversation with you and Mr. Mauszycki on February 10 and to confirm the tentative arrangements for the proposed project. As we discussed, the Department of Dietetics, Restaurant and Institutional Management is doing a series of studies concerned with behavioral factors affecting the foodservice industry. As part of this series we are proposing a study investigating the design of nonsupervisory jobs in hospital foodservice. The focus of this particular study is a comparison of the motivational potential for jobs in the conventional foodservice and in the more technically advanced foodservices (specifically cook-chill and cook-freeze).

Last Friday, we tentatively identified ten client foodservices in ARA's Midwest Area. Selection was based on size, type of system, and geographic location. As agreed this letter has been drafted to be used to help explain the study to district managers, unit managers, and administrators associated with those facilities. In the next paragraphs, the procedure and requirements for the study are explained. We appreciate the courtesy and effort extended by your company in this effort.

As we agreed, after your district managers have contacted each of the clients, I will initiate contact via telephone to arrange an introductory visit to the various hospitals during the last two weeks of March. During this visit I would like to meet the foodservice director and the contract liaison person, and to familiarize myself with the facilities.

A later visit will be scheduled in April or May at each institution for actual collection of data. The three instruments to be used for collecting the basic data for this study are the (1) Job Diagnostic Survey (JDS), (2) Job Rating Form, and (3) Employee Performance Appraisal (Enclosures 1, 2, and 3). The first questionnaire will be completed by the employees; the second and third, by supervisory or managerial personnel.

Page two

According to our proposed plans the employee questionnaire will be completed during this second visit. We hope that as many of the nonsupervisory workers as possible will participate. Participation will be voluntary but the larger the sample, the greater reliability of the resultant data. We hope, however, that the foodservice directors will encourage employees to take part in the study. Ideally, the questionnaire will be completed by each person in groups of three or more employees, but the grouping and scheduling of meetings with workers will be planned in accordance with each organization's best interests. At the introductory meetings we can discuss this aspect in more detail.

At the time of administration of the questionnaire, the research objective will be explained, as well as the process for collating and summarizing the results. Also employees will be assured of confidentiality of their responses. We will furnish all forms and pencils. Since no supervisory personnel will be present during the administration of the questionnaire, a room or area conducive to completing the JDS will be needed. The process should take no longer than 30-35 minutes.

The forms to be completed by the managerial and supervisory personnel will be left on site, to be completed at the convenience of the personnel involved. These forms can be returned to us at Kansas State University at a later time.

In addition to the data collected from the three research instruments, we would like some information from the facility records. Specifically, we would like to have a copy of the organization chart and job descriptions and pay scales for the nonsupervisory positions being studied.

Again, thank you for your cooperativeness and willingness to assist with the study. We were certainly impressed with the interest you and Mr. Mauszycki showed and look forward to the opportunity to work with your organization. We will be in contact with you later. If you should need to contact us, the office number is 913/532-5521, home (J. Shaffer) 539-6017, or home (A. Vaden) 539-6256. Thank you for your time and cooperation.

Sincerely,

Joseph G. Shaffer
Graduate Student

Allene G. Vaden, Ph.D., R.D.
Associate Professor

Enclosures

JGS/fj

APPENDIX E

Hospital Descriptions

Description of the hospitals

Conventional systems:

1. Central Kansas Medical Center

bed capacity	180
system type	conventional
system age	14 years
location	Great Bend, KS
ownership	nongovernment not for profit
personnel	
management	3
dietitians	1
clerical	1
all other personnel	43
full-time	26
part-time	17
special characteristic(s)	located in small city with rural surroundings

2. Providence St. Margaret Health Center

bed capacity	350
system type	conventional
system age	1 year
location	Kansas City, KS
ownership	church operated
personnel	
management	7
dietitians	4
clerical	1
all others	80
full-time	44
part-time	36
special characteristic(s)	hospital resulted from consolidation of two inner-city hospitals and most employees came from those two operations

Description of the hospitals (cont.)

3. North Kansas City Memorial Hospital

bed capacity	310
system type	conventional
system age	12 years
location	North Kansas City, MO
ownership	city
personnel	
management	8
dietitians	4
clerical	1
all others	70
full-time	47
part-time	23
special characteristic(s)	provides meal service to a 50 bed satellite facility, meals on wheels and a day care center

4. Menorah Medical Center

bed capacity	454
system type	conventional
system age	
location	Kansas City, MO
ownership	nongovernment not for profit
personnel	
management	13
dietitians	4
clerical	2
all others	108
full-time	72
part-time	36
special characteristic(s)	provides Kosher meal service for Jewish patients

Description of the hospitals (cont.)

5. Lutheran Medical Center

bed capacity	293
system type	conventional
system age	7 years
location	Omaha, NE
ownership	church operated
personnel	
management	8
dietitians	2
clerical	1
all others	61
full-time	32
part-time	29
special characteristic(s)	provides meal service to 100 bed psychiatric facility

Highly technical systems:

1. St. Joseph Hospital

bed capacity	300
system type	cook-chill
system age	1 year
location	Kansas City, MO
ownership	nongovernment not for profit
personnel	
management	8
dietitians	3
clerical	1
all others	78
full-time	43
part-time	35
special characteristic(s)	conventional meal preparation and service for cafeteria

Description of the hospitals (cont.)

2. St. Elizabeth Community Health Center

bed capacity	208
system type	cook-freeze
system age	8 years
location	Lincoln, NE
ownership	church operated
personnel	
management	5
dietitians	2
clerical	1
all others	52
full-time	41
part-time	11
special characteristic(s)	dishware washed by services department of hospital and floors maintained by housekeeping, also serve Title 7 meals Monday through Friday

3. Immanuel Medical Center

bed capacity	386
system type	cook-freeze
system age	4 years
location	Omaha, NE
ownership	church operated
personnel	
management	7
dietitians	4
clerical	1
all others	60
full-time	37
part-time	23
special characteristic(s)	no dishwashing operation; floors maintained by housekeeping department

Description of the hospitals (cont.)

4. Creighton Memorial-St. Joseph Hospital

bed capacity	430
system type	cook-freeze
system age	5 months
location	Omaha, NE
ownership	nongovernment not for profit
personnel	
management	4
dietitians	5
clerical	3
all others	118
full-time	83
part-time	35
special characteristic(s)	dining room meals primarily conventional meal service to 125 bed satellite facility

APPENDIX F

Letter of Confirmation

KANSAS STATE UNIVERSITY

Department of Dietetics, Restaurant
and Institutional Management
Justin Hall
Manhattan, Kansas 66506
Phone: 913 532-5521-2

We are pleased you have agreed to participate in the job design research sponsored by the Department of Dietetics, Restaurant, and Institutional Management here at Kansas State University. As we discussed, I will return to your hospital on . to administer the Job Diagnostic Survey and collect all the other data.

Data collection from all participating hospitals will be completed by May 31, 1978. We will analyze the data this summer. A report of the final results will be sent to you in the fall.

Your interest and responsiveness in this research is appreciated. Please let me know if you have any questions. I am looking forward to my return visit.

Sincerely,

Joseph G. Shaffer
Graduate Student

Allene G. Vaden, Ph.D., R.D.
Associate Professor

APPENDIX G

Employee Instructions

INSTRUCTIONS TO EMPLOYEES

I am Joseph Shaffer, a graduate student in the Department of Dietetics, Restaurant, and Institutional Management at Kansas State University. We are conducting a survey concerning the design of jobs in hospital foodservice. Your hospital is one of nine selected to participate in the study. I would like you to help in this survey by completing the questionnaire as honestly and accurately as possible. I would also ask that you do not consult anyone sitting near you concerning your answers.

Do not put your name on the questionnaire, but do sign the attached card and give that to me now. I need this in order to match your questionnaire with your job description. Your name will not be linked with your answers. All information will be kept strictly confidential. No one at the hospital will see the individual questionnaires. Only the staff at K-State involved in the coding will see the questionnaires.

Answers from the questionnaire will be punched on a card like this (show card) and submitted to the computer. This is the form in which I will receive the information (show a sample printout).

Now, let me briefly describe the various parts of the questionnaire to assist you in answering the questions. There are eight separate sections contained in the eleven pages. Each section begins with self-explanatory instructions, however, two sections of the questionnaire may be a little more difficult than the others. Please turn to page seven. When you answer the questions on this page it is important that you indicate the degree to which you would like to have each of these things present in your job. For example, you might like having quick promotions extremely much, but very friendly co-workers only a moderate amount or less. You would then give quick promotions a 10 and very friendly co-workers a 4. Also, on page eight we are asking you to choose between two different jobs in each question. Even though the two jobs may appear to be unrelated it is important that you choose the one that you prefer. Assume that everything else about the job is the same. Pay attention to only the characteristics actually listed.

It is important to answer all the questions if possible. Place the completed questionnaire in the envelope, seal it, and give it directly to me. If you have any questions please feel free to ask.

I appreciate your help and cooperation in this study.

APPENDIX H

Supervisor Instructions

Department of Dietetics, Restaurant
and Institutional Management
Justin Hall
Manhattan, Kansas 66506
Phone: 913 532-5521-2

TO: Supervisors of Participating Foodservices

FROM: Joseph G. Shaffer
Graduate Student

Allene G. Vaden, Ph.D., R.D.
Associate Professor

SUBJECT: Hospital Foodservice Job Design Research

At Kansas State University we are involved in a project studying the design of jobs in hospital foodservice. The Administrator and Foodservice Director of your hospital have given us permission to conduct the study within your foodservice. As part of the project, we would like you to do two things.

First, we would like you to evaluate each of your employees. Forms are provided and one form should be completed for each employee. The Performance Evaluations will be kept completely confidential and used only for research purposes. Check (✓) the one response that best describes the employee's performance on the item in question. Please be as candid as possible. In these evaluations we are looking for differences in degrees of performance. For example, an employee may be superior in accuracy of work but only satisfactory in amount of work performed. Do not write the employee's name on the form. The form is identified with an ID number for analysis purposes only. The index card attached to the form will tell you the name of the employee you are evaluating.

Second, we would like you to complete a Job Rating Form for each different job you supervise. The Job Rating Forms provided have self-explanatory instructions.

Again, no one will know what you have written. I will leave an addressed, pre-stamped envelope for you to return the completed forms to me at Kansas State University. Please try to return these forms within one week of my visit to your hospital.

Please keep in mind that it is important for every item to be completed on these forms. Your responses must be honest and as accurate as possible. Please do not discuss any of the answers with the employees.

All data will be grouped together and returned to the hospital. Thank you for your assistance and cooperation.

APPENDIX I

Supervisor Memorandum

Department of Dietetics, Restaurant
and Institutional Management
Justin Hall
Manhattan, Kansas 66506
Phone: 913 532-5521-2

To:

From: Joseph G. Shaffer, graduate student

This acknowledges receipt of:

_____Job Rating Form(s)

_____Employee Performance Evaluation(s)

Thanks for your assistance.

APPENDIX J

Report of Visit

Department of Dietetics, Restaurant
and Institutional Management
Justin Hall
Manhattan, Kansas 66506
Phone: 913 532-5521-2

JOB DESIGN IN HOSPITAL FOODSERVICES

Report of Visit to Hospital

Date of Visit: _____ Bed Capacity: _____

Time: _____ Foodservice Manager: _____

Hospital: _____ Type of System: _____

Address: _____ Initiation of current system: _____
Street

_____
City State Zip Code

Date contacted concerning visit: _____

How contacted: _____

Comments:

Schedule during visit:

Comments concerning visit:

APPENDIX K

Employee Data Record

Hospital:_____ Location:_____ Date of Visit:_____

ID No.	Name	Job	Wage Per Hr.	Supr.	Date Employed	Days Absent 10/1-3/31	Job Description	Job Rating Form	Perf. Eval.

APPENDIX L

Visit Checklist

Hospital: _____ Date: _____

Location: _____

VISIT CHECKLIST

Organization chart _____

Job descriptions _____

Pay scales _____

Sick leave data _____

Personnel policies _____

Duty schedules _____

Turnover rate _____

Job rating forms _____

Performance evaluations _____

APPENDIX M

Job Category Descriptions

Composite jobs compiled from the hospital foodservice job descriptions:

1. cafeteria worker	set up cafeteria serving line; clean tables; serve hot and cold food on cafeteria serving line, replenish serving line; store leftovers; clean serving line; make coffee; assist in meeting room with meal service; general cleaning of cafeteria equipment and serving line; arrange lettering on menu board; portion desserts and salads; may do some short order cooking; replenish condiments; fill napkin holders; prepare simple garnishes; may relieve cashier occasionally; reconstitute frozen food occasionally; replenish vending machines; collect vending machine monies occasionally and prepare simple desserts.
2. cashier	perform simple clerical duties; perform complex cashier duties to include maintaining cash reports, operating cash register, handling monies, set register prices and clean register; clean tables; brew coffee, occasionally; requisition cafeteria supplies; post daily menu; report customer complaints; make sandwiches, occasionally; and may assist on serving line.
3. cook	operate all foodservice equipment; cook a variety of foods using all methods of preparation to include frying, steaming, roasting, baking, grilling, and broiling for patients and staff; may assign tasks to helpers such as pre-preparation; replenish serving lines; clean work area and equipment; may serve food prepared; requisition food for menu item preparation; may prepare food for special catered meals; prepare and bake complex desserts such as cakes, breads, pies, and other pastry.
4. dietetic clerk	maintain patient diet information; arrange menus; tally patient trays; maintain nourishment records; check trays for accuracy; clean work area; answer telephone; fold menus; receive and relay messages to and from the wards; write identified data on menus; tally menu items;

4. dietetic clerk (cont.)	assist with tray assembly; assist dietitian; type miscellaneous items; prepare late trays; clean trayline; relieve patient services workers on weekends; supervise trayline when supervisor is absent; plan special menus; inventory and maintain supply of instructional material; deliver menus to patients; assist patients in selecting menus; provide liaison between foodservice and nursing service.
5. general foodhandler	serve food on patient trayline; perform simple food preparation tasks such as making toast, salads, desserts, beverages, nourishments, and sandwiches; portion food; clean work and equipment; deliver nourishments to patient areas; replenish serving lines; pre-prepare ingredients for menu items prepared by cooks; slice and wrap meats; may pass nourishments to patients; may maintain simple records of quantities prepared and served; may use all types foodservice equipment.
6. general kitchen worker	perform general labor tasks incidental to moving equipment and supplies from one place to another; sweep and mcb floors; remove trash; clean pots and pans; clean food preparation equipment; assist with moving food in and out of storage; sort, clean, and store dishware; assist tray assembly; assist with simple food preparation; may perform any task within the operation except complex cooking.
7. patient tray attendant	distribute meals and nourishments to patients; stock patient area pantries; prepare tray garnishes; clean foodservice equipment; work on trayline assembling trays and serving food; check patient trays for accuracy; clean work areas; occasionally clean food carts; pick-up and return trays from patient areas; assist in stripping food delivery carts following meals; occasionally collect menus; may work in ward galleys reconstituting/thermalizing foods for patients.

8. sanitation worker	wash dishes; occasionally assist other areas of foodservice; store clean dishes; sweep and mop floors; do general cleaning to include floors, walls, and equipment; wash pots and pans; strip and clean dish-machine; remove trash from foodservice; pull tray carts to and from patient areas.
9. storeroom worker	check-in and inspect deliveries from vendors; clean and wrap produce deliveries; wash and pan chickens and store in freezer; clean storeroom areas and equipment; work in dishroom occasionally; place stock in storage; conduct inventories; fill requisitions and deliver to appropriate using area; perform general kitchen cleaning occasionally; maintain records or all receipts and issues; rotate stock; may perform simple food preparation tasks; may assist other foodservice workers when time permits.

JOB DESIGN IN CONVENTIONAL AND HIGHLY TECHNICAL HOSPITAL FOODSERVICE SYSTEMS

by

JOSEPH G. SHAFFER

B.S., Indiana University of Pennsylvania, 1969

AN ABSTRACT OF A MASTER'S THESIS

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

Department of Dietetics, Restaurant,
and Institutional Management

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1979

ABSTRACT

As foodservice technology changes, the design and behavioral characteristics of jobs are affected. Limited research has been conducted concerning the effects of job design on the psychosocial subsystem of the foodservice system. This research compared the characteristics of jobs designed for conventional and for more highly technical (cook-chill/cook-freeze) hospital foodservice systems by sampling 270 nonsupervisory foodservice workers in five conventional and four highly technical systems.

The Job Diagnostic Survey developed at Yale University was used to measure core job dimensions of task variety, task significance, task identity, and feedback from the job; critical psychological states (experienced responsibility, experienced meaningfulness of work, and knowledge of results); affective responses to jobs; and individual growth need strength. Supervisors rated the jobs also and completed performance evaluations on each of the employees in the study. Other organizational data such as individual absenteeism, wage rates, organization charts, personnel policies and procedures, and duty schedules were collected to assist in analysis of study findings.

Comparisons among types of systems was the key aspect of the study, but comparisons among types of jobs also was investigated. Nine standard job categories were developed from the job descriptions supplied by the hospitals: cashier, cafeteria worker, cook, dietetic clerk, general foodhandler, general kitchen worker, patient tray attendant, sanitation worker, and storeroom worker. No significant differences were found

between the jobs in the conventional and technical systems on the basis of the core job dimensions. Two critical psychological state scores, experienced meaningfulness of the work and experienced responsibility for the work outcomes, were significantly higher in the technical systems as was one affective response score, internal work motivation.

Comparisons by job indicated cooks perceived their jobs to have more skill variety and task identity than most of the other jobs whereas dietetic clerks expressed a greater sense of dealing with others in their work. Four job groups had significantly higher motivating potential scores (MPS), cashiers, cooks, dietetic clerks, and storeroom workers, than did the remaining five job groups. The high MPS jobs also had higher scores on personal and work outcomes. In comparisons of supervisory and employee ratings of jobs, the supervisors tended to rate the core job dimensions higher than did the employees. For most of the jobs, the supervisors rated feedback from agents significantly higher than did the foodservice workers.

In general, the design of the jobs in conventional and highly technical hospital foodservice systems did not differ greatly. The design of specific jobs, however, did have significant positive effects on personal and work outcomes. Cashiers, cooks, dietetic clerks, and storeroom workers by design of the behavioral characteristics of their jobs showed higher personal and work outcomes than did general food-handlers, general kitchen workers, cafeteria workers, patient tray attendants, and sanitation workers.