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CAUSAL MODELING OF ORGANIZATIONAL COMMITMENT

by
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ABSTRACT

CAUSAL MODELING OF ORGANIZATIONAL COMMITMENT

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This research was designed to develop a model of organizational commitment by establishing a causal network between three characteristics of the individual, work motivation, tenure, and job satisfaction, two organizational/structural variables, decentralization and formalization, and two job characteristics, the core job dimensions and job stress as determinants of commitment. In addition, this research was also intended to explore the role of mental health within the proposed construct system.

The proposed model was tested on five samples, a subsample of male and female employees, a female blue and white collar subsample and a male white collar sample. Successive iterations of a path analytic technique indicated that across the five occupational categories was the most important determinant of organizational commitment. However, if the facets of job satisfaction were examined more closely, important differences became apparent. Both blue collar and professional women reported that satisfaction with supervision determined, in part, their identification with organizational goals. Blue collar and

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CHAPTER 1

INTRODUCTION

One of the most frequent complaints heard recently from theorists and practitioners alike is that the values of employees, particularly, in terms of loyalty to the organization, have changed considerably. Commenting on the changing values of the American worker, Yankelovich (1979) cited the following statistics: in the 1960s approximately 50 percent of employed Americans considered their work a source of personal fulfillment; now the total is fewer than 25 percent. Moreover, in the 1950s, 58 percent believed that "hard work always pays off"; now only 43 percent hold this belief. Finally, today only 13 percent of working Americans find their work truly meaningful and more important to them than their leisure time activities. This change in values implies a shift from the Protestant ethic to what many refer to now as the "leisure ethic" according to which employees seem to be more critically examining the personal costs/benefits of their "supremacy of work philosophies" (Gavin, 1977). Similarly, with respect to commitment, managers are expressing their concern with lack of employee commitment.

Organizational commitment has been used synonymously with terms such as organizational loyalty, professional commitment, organizational attraction, and role commitment without clearly differentiating these related constructs

(Stevens, Beyer & Trice, 1978). Other researchers (e.g. Schein, 1970) have viewed commitment as a dimension of organizational effectiveness, or see it as the willingness of an employee to exert high levels of effort on behalf of the organization, and an acceptance of its major goals and values (e.g. Porter, 1968). Still others such as Kanter (1968) define organizational commitment as the willingness of social actors to give energy to the organization, as an affective attachment to the goals and values of the organization (Buchanan, 1974) or a normative attitude based on values and expectations of loyalty and duty (Weiner & Yardi, 1980).

From a theoretical perspective, many of the early conceptualizations of organizational commitment were derived from exchange theory. Homans (1958), for instance, considered commitment in terms of the bargaining or exchange relationships between the employee and the organization; the more favorable the exchange in terms of costs and benefits from the employee's point of view, the greater his or her commitment to the system. Similarly, Becker (1960) redefined the simple exchange paradigm by introducing the concept of side bets or the investment quality of organizational participation. According to Becker, the more an employee has invested into the organization, and the more he or she could lose by leaving, the greater the personal commitment to the organization. Implicit in this version of exchange theory is the idea that as investments or side bets

accumulate, the attractiveness of other organizations or occupations declines in comparison.

Sheldon (1971), in an attempt to provide evidence on the concept of side bets proposed by Becker, studied Ph.D. scientists in a large private laboratory. She departed from the assumption that scientist's commitment would follow their investments in the organization which was defined as age, position, and length of service. Although all of these factors were associated with commitment, an unexpected interaction between length of service and position emerged such that for younger employees, those occupying middle-level positions were less committed than those in higher or lower positions. Nevertheless all scientists were highly committed after ten years of service regardless of position.

Sheldon (1971, p. 145) hypothesized that investments lead to commitment in the following manner: the employee makes decisions at various points of his or her career regarding whether to remain or to leave the organization. Unanticipated consequences follow from these decisions, including the consequence that alternative employment options become less feasible. The individual may even be unaware of the extent to which his or her previous decision, including decisions by default, have affected the present position until a career decision is required. At that time, if the person has investments in the organization, he or she may have no choice but identify with the organization, thereby becoming committed to the organization. Thus,

investments can be thought of, as Kanter (1968) suggested, as contributions whereby present participation is tied to continued membership in the organization. As the propensity to remain with a given company increases as a function of the worker's growing commitment, the person's social identity becomes tied to that of the organization (Scholl, 1981).

March and Simon (1958) postulated in their model of employee turnover that the propensity of an individual to leave the organization is primarily influenced by his or her satisfaction with the job (see research hypothesis #19 in Chapter 2). Briefly stated, since a more detailed review of the relationship between satisfaction and commitment is presented in Chapter 2, the greater the individual's satisfaction with the job, the lesser the propensity to search for alternative jobs. Although March and Simon found that the satisfaction (or the motivation to withdraw from the organization) factor held for both voluntary turnover and absenteeism, the question of a critical level on the satisfaction-dissatisfaction scale at which job holders commence to scan alternative options has not been sufficiently considered. In addition to the satisfaction factor, the March and Simon model also predicts that the greater the number of perceived extra-organizational alternatives, the greater the employee's propensity to leave.

Most of the researchers quoted above conceived of commitment as involving some psychological bond between the employee and the organization. Sometimes this psychological bond is equated with the employee's identification with the goals of the organization as the employee perceives them. Hall, Schneider and Nygren (1970) stated that the organizational identification is the process by which the goals of the organization and those of the individual become congruent and integrated. Consequently, a positive relationship can be expected between organizational identification and individual commitment to organizational goals, a hypothesis which was supported by their data.

These various attempts at defining the concept of organizational commitment clearly indicate that despite the extensive research on the topic, a comprehensive definition of the concept does not exist nor does a model of the commitment process which incorporates divergent points of view (Scholl, 1981). However, although no widely agreed upon definition is accepted, most researchers contend that organizations value loyalty and dedication of their members because presumably the more committed employees are to an organization, the more productive and satisfied they are. Furthermore, committed employees stay on the job longer and are willing to make personal sacrifices for the organization. Moore (1965) suggested that a committed employee is important to the organization because (a) he or she requires less supervision and performs better than a

noncommitted employee and (b) the employee behaves more predictably in crisis situations and other situations requiring individual decision making.

According to Scholl (1981), two clearly divergent schools of thought may be distinguished in the current literature on organizational commitment. The first approach which has been labeled the rational or attitudinal school (Porter, Steers, Mowday & Boulian, 1974; Steers, 1977) considers commitment as an employee attitude or a set of behavioral intentions such as the desire to remain with the organization whereas the second school of thought, variously referred to as the behavioral or irrational school, views commitment as a force tying the individual to a specific organization (Becker, 1960). The behavioral school uses the concept of investment to explain membership and, in doing so, implicitly defines commitment as a type of force directing individual behavior. This approach, according to Scholl, has utility in that commitment, viewed as a motivating force, acquires predictive and explanatory power it does not have when defined as a set of behavioral intentions. As a result of these divergent conceptualizations, commitment, while a complex facet of organizational behavior, is only partially explained by existing theories.

Yet despite the lack of consensus regarding the conceptualization of organizational commitment, few researchers and practitioners alike question the importance

of commitment with respect to critical work related outcomes. For example, evidence has consistently suggested that organizational commitment is an important predictor of employee turnover (Koch & Steers, 1978; Porter, Crampon & Smith, 1976; Steers, 1977). Moreover, the findings by Mowday, Porter and Dubin (1974) indicated that highly committed employees may perform better than less committed employees. Finally Porter et al. (1974) reported that organizational commitment was a better predictor of eventual turnover across several time periods than were measures of satisfaction with various facets of the job.

The importance of organizational commitment with respect to work related outcomes is probably best illustrated by the lifetime commitment in Japanese work organizations which is central to the social organization of Japanese companies and supported by the belief in "the firm as one family." The Japanese model of lifetime commitment predicts minimal interorganizational mobility since men (the model does not apply to women) enter organizations after completing school, with the expectation that they will remain in the organization until retirement at age 55 (Marsh & Mannari, 1971). The basic meaning of lifetime commitment is that there is a tightly reciprocal set of obligations between the company and the employee; the company will not discharge the employee except in most extreme circumstances, and the employee, in return, will not quit the company for employment elsewhere. As a result of this lifetime

commitment, Japanese workers tend to have a greater sense of loyalty to their employing organization than their American counterparts. Abegglen (1958), for example, stressed a deeper level of commitment to the employing firm, culturally distinctive for Japan and stated that the worker, whether laborer or manager, is bound to remain in the organization's employ, despite potential economic advantages associated with job transfers. In this view, the worker considers it morally right to stay with the company, regardless of how much status enhancement or satisfaction the organization provides over the years (Tairi, 1962). According to Abegglen (1958), the cause of this lifetime commitment in industry is that in Japan loyalty to the group and with it an interchange of responsibilities and a system of shared obligations take the place of the economic basis of employment (p. 17). Numerous studies of Japanese organizations (e.g. Cole, 1971; Marsh & Mannari, 1971; 1972; 1976) have emphasized lifetime commitment to organizational norms and values as a distinctively Japanese factor in the life cycle of Japanese organizations. Loyalty is, of course, rewarded by the organization over the years by an accumulation of pay increases, bonus and fringe benefits, paid vacations, promotions, and in general by a steadily advancing status in the company (Marsh & Mannari, 1971).

The only currently existing approximation of a model of organizational commitment was proposed by Steers (1977) who attempted to link a set of hypothesized antecedents with

empirically validated outcomes (e.g. attendance, retention) of commitment. The antecedents were grouped into three categories: (1) personal characteristics such as age, education, or need of achievement; (2) job characteristics to include job challenge and opportunities for social interactions; and (3) work experiences based on group attitudes toward the organization, trust, or the realization of personal expectations during the employee's tenure in the organization. Although no attempt was made to establish causal relationships among these antecedents and outcomes, it was reported that the three classes of antecedents related significantly to commitment. However, as Steers (1977) noted, since few studies have taken a systematic or comprehensive approach, the findings from research on commitment have not been cumulative or conceptually woven into a theoretical framework that can be applied to different organizations.

The purpose of this research was to develop a comprehensive model of commitment. The approach used combines empirical research on the topic with recent findings from research and theory in the areas of work design (Hackman & Oldham, 1976; Hackman & Suttle, 1977) and job stress (McLean, 1979; Cooper & Payne, 1979) while at the same time incorporating individual and organizational concomitants of commitment into a framework of causal relationships. As Farrell & Rusbult (1981) pointed out, most research on commitment has either explored the

relationship among various individual predictors of commitment such as age, education or tenure or has examined the impact of one or more theoretical constructs such as side bets on commitment (e.g. Buchanan, 1974; Aranya & Jacobson, 1975; Pfeffer & Lawler, 1980) without developing a general theory of the causes of commitment.

The primary goals of this research are twofold:

- a. to delineate a theoretical model of commitment by identifying a set of causal interrelations among individual, job, and organizational variables
- b. to test the proposed model on male and female employees in a variety of occupational and organizational settings.

This research contributes to the present understanding of organizational commitment in a number of important ways. First, the theoretical framework has been enlarged by incorporating both job characteristics and job related stress into the causal model. The job characteristic model developed by Hackman & Oldham (1976) specifies the relationships between core job dimensions and psychological states (experienced meaningfulness of the work, experienced responsibility for the outcome of work and knowledge of the results of work activities). The model postulates that an individual experiences positive affect to the extent that he or she learns (knowledge of results) that he or she has personally performed well on a task (experienced

responsibility) he or she cares about (experienced meaningfulness) (Hackman & Oldham, 1976, pp. 255-256). Furthermore, of the five job characteristics, three, namely skill variety, task identity and task significance, are hypothesized to combine additively to determine the psychological meaningfulness of the job. The job characteristic of autonomy, on the other hand, is predicted to prompt the employee's feelings of personal responsibility for the work outcome while the job characteristic of feedback is hypothesized to foster knowledge of results (p. 257).

The job characteristic model has made significant contributions not only because it summarizes and integrates a large body of research but, more importantly, because it specifies the main features of jobs which affect incumbents' attitudes and behavior. The model predicts, for instance, that jobs high on the five core dimensions lead to greater job satisfaction, higher internal work motivation, and lower levels of absenteeism and turnover. These predictions have been largely supported by empirical research (Oldham, 1976).

Despite the obvious importance of the construct of job characteristics, a number of methodological, analytic, and substantive issues regarding the overall validity of the model have been raised (Arnold & House, 1980). While the existing evidence suggests that the core dimensions do indeed affect work related outcomes through the psychological states, some of the job characteristics,

particularly autonomy, appear in some investigations to affect psychological states other than those specified by the model (Wall, Clegg & Jackson, 1978). In addition, the model does rather poorly in predicting performance.

Psychometrically, the model has its own dragons to slay. Thus far, only one convergent study of the task characteristics has been conducted which assumed that convergence was demonstrated by using different kinds of raters (Jenkins, Nadler & Lawler, 1975). Furthermore, little attention has been paid to the applicability of the model to working women and blue collar manual workers of either sex. The model has essentially been developed and validated on males drawn from relatively homogeneous job families; little is known about the importance of the core dimensions for female workers, especially across diverse job categories.

Corresponding to the restricted scope of samples and job families are analytical procedures which are also rather restricted in scope. As Jackson, Paul & Wall (1981) pointed out, analytical procedures for fitting moderator effects (such as growth needs) have relied almost exclusively on the selection of groups high and low on the hypothesized moderator variable and then compared the magnitude of the correlations between independent and dependent variables of interest or have employed stepwise regression techniques to capture the moderator effect. Both procedures are notoriously subject to bias.

Finally, some research (e.g. Dunham, 1976; Oldham, 1977) has suggested that environmental, non-task variables which act as moderators have not as yet been well documented and have not been fitted to the job characteristic model. Taken together, the available evidence suggests that neither theoretical integration, nor as will be shown in Chapter 3, the measurement of the job characteristics is complete. Therefore, a secondary aim of this research was to extend the job characteristic model by (a) building structural/-organizational elements into the model, and (b) exploring the role of mental health within the general framework of the model. Finally, the present research represents an attempt to cross validate the model using three female samples from divergent occupational categories including professional, white, and blue collar women.

The second major contribution of the causal model developed here involves in the inclusion of job stress (which is discussed in Chapter 2) as an integral part of the commitment process. Thus, although the model constitutes a new approach to studying commitment, the theoretical constructs upon which it rests including the core job dimensions and job related stress are firmly grounded in traditional organizational literature.

Finally, at a macro level, this research may also be viewed as an attempt at applied theory building since it integrated research from areas which have not been linked conceptually in the past. The theory of organizational

commitment proposed in the causal model here utilized constructs germane to industrial/organizational psychology and put them together in a set of regression equations (path model). The proposed theory is best described as eclectic since it employs behavioral concepts such as extrinsic reinforcement as well as cognitive ones (e.g. job satisfaction as a met expectancy).

The quality of any applied theory which purports to entangle an empirical puzzle hinges, of course, on its utility to yield reasonably accurate predictions. Traditionally, theories have frequently been ineffective in guiding behavioral applications because they operate on the ideal of "what should be" rather than on reality of "what is" (Boehm, 1980). As a result, practitioners have often discounted what theorists have proposed because the concepts and propositions of the theorist do not fit the practitioner's reality. Applied theories, on the other hand, which by definition must make contact with reality, provide an opportunity for cross-fertilization in both the real world and theory generated research. As Dubin (1976) suggested, more applied theories are needed which are aimed at making behavioral science findings more organizationally applicable. It is with this call for more applied theories in mind that this research was designed and undertaken.

CHAPTER 2

ORGANIZATIONAL COMMITMENT: A CONCEPTUAL MODEL

Organizational commitment is concerned with the extent to which employees identify with organizational goals, value organizational membership and intend to work hard to attain the overall organizational mission (Porter, Steers, Mowday & Boulian, 1974; Steers, 1977). As indicated in the introduction, commitment has been viewed in two ways in the literature. Staw (1977) distinguished between attitudinal and behavioral commitment. Attitudinal commitment is viewed from the definitional perspective offered above, i.e. commitment is a function of the extent to which employees identify with the organization and wish to remain a member. The second way of conceptualizing commitment is termed behavioral commitment which is seen as a process by which people make irrevocable decisions that they cannot "back out" of the organization without extreme difficulty.

Steers and Porter (1979) argued that from the behavioral perspective, employees become committed to certain courses of action (such as joining an organization) and incur "sunk costs" that make it difficult to take alternative courses of action. For example, a blue-collar employee who undergoes a four-year apprenticeship program to become a skilled electrician and collects incremental wages and seniority in the process may find that the sunk costs in time, seniority and wage level "commit" him or her to the

organization in the sense that the person cannot afford to go elsewhere. In contrast to the attitudinal approach, the behavioral conceptualization of organizational commitment makes no assumptions about an employee's agreement with organizational goals and values, nor does it imply a willingness on part of the employee to work hard to assure the attainment of organizational goals.

As Staw suggested, the rational or attitudinal model of commitment takes the general form of expectancy theory, according to which employee behaviors are the results of valued rewards, whereas the behavioral school treats expectancy and commitment as independent behavior-stabilizing forces. Nevertheless, the two approaches to organizational commitment, attitudinal and behavioral, are not necessarily conflicting, but co-exist. That is, employees become attached to the organization as a result of past choices (behavioral commitment); however, behavioral commitment does not guarantee a high level of attitudinal commitment. On the other hand, employees may identify strongly with organizational goals and values (attitudinal commitment) without being necessarily determined to remain with the organization.

The distinction between behavioral and attitudinal commitment as well as the various psychological views offered in Chapter 1 seems to be compatible with managerial requisites of loyalty and commitment.

A slightly different perspective on commitment was developed by sociologists who are more interested in conflicting commitments and multiple role orientations of individuals in organizations. For example, Schoenherr and Greeley (1974) stressed role commitment as a process which links a person to a position in a social system. Sociologists suggest that involvement in one organization is partly a function of involvements in other organizations (i.e. family, work group, etc.). In general, however, sociologists' views are quite similar to those of psychologists who are, by and large, concerned with the employee's willingness to leave or stay with the organization (Hrebiniak & Alutto, 1972).

The purpose of this chapter is to describe a model of organizational commitment in view of the fact that current conceptions of commitment are too restrictive because they imply that commitment is relevant to organizations mainly because committed employees tend to stay with the organization.

Since observation by itself does not reveal ordered relationships among empirical phenomena, models are useful tools for examining multiple relationships within a set of variables. Although a fairly wide range of variables may affect organizational commitment, the constructs making up this model were selected based upon the following criteria: (a) the independent and dependent variables were backed by theoretical developments; (b) for each construct explicit

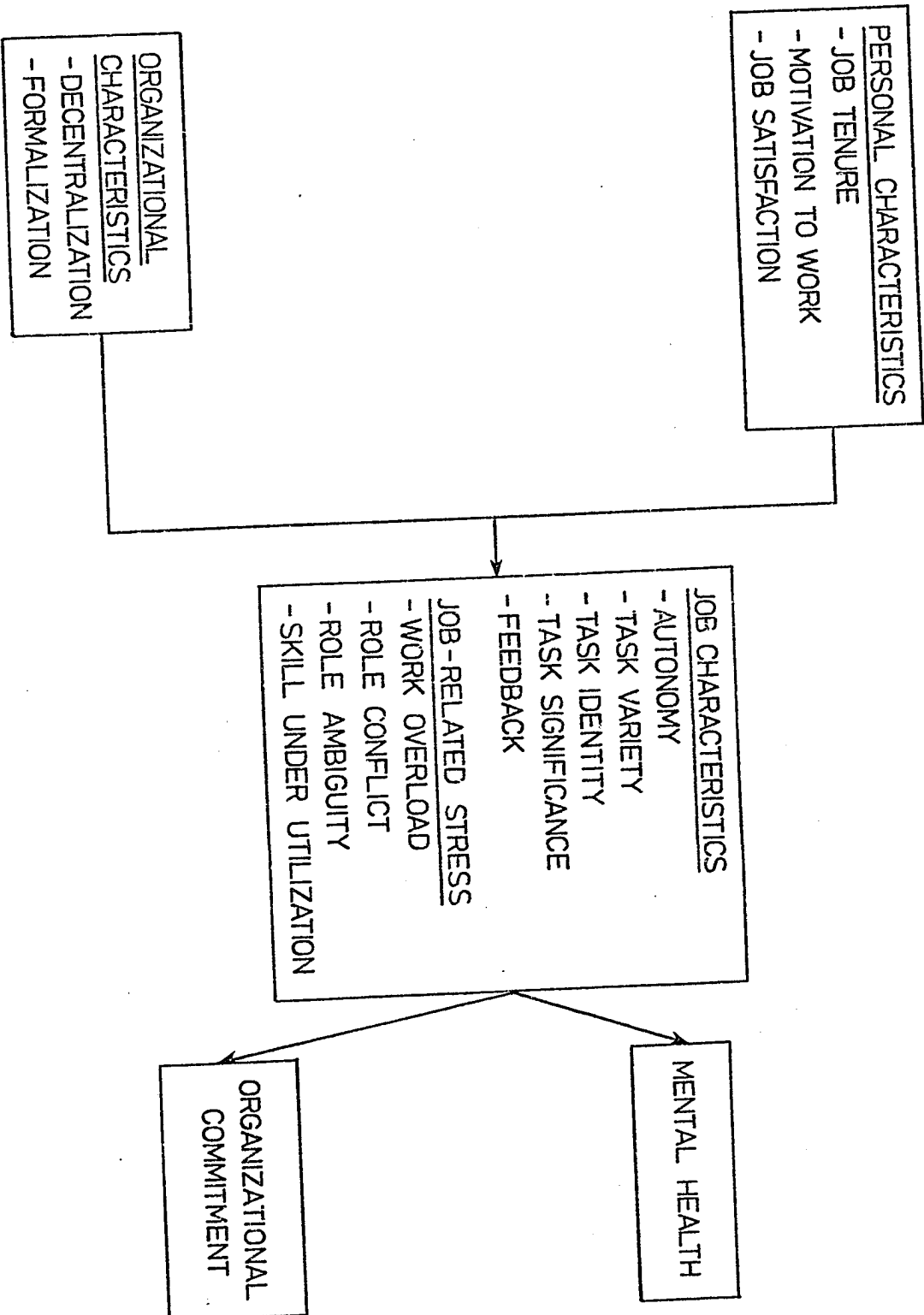
operational definitions existed which were used fairly consistently in the literature and (c) at least some relationships between the constructs were tested in propositional form in previous research which allowed for a rather straightforward integrative logic to be used in the development of the model.

The proposed model, schematized in Figure 1, is comprised of three sets of antecedents which will be discussed in detail: (1) a set of individual variables to include an employee's motivation to work, job tenure, and job satisfaction which constitute the first stage of the model; (2) a set of organizational-structural variables represented by decentralization and formalization making up stage two; and (3) a set of job characteristics (stage three), which may, in turn, be viewed as falling into two categories: (a) positively valued job facets such as autonomy on the job, task variety and feedback from supervisor, and (b) a negatively experienced job characteristic, job stress.

Insert Figure 1 about here

The specific constructs representing individual, organizational and job characteristics which are hypothesized to determine organizational commitment are operationally defined in Table 1.

FIGURE 1
SCHEMATIC MODEL OF ORGANIZATIONAL COMMITMENT



Insert Table 1 about here

In the discussion of the theoretical model, the empirical literature concerning the proposed constructs and their interrelationships is reviewed in this chapter in conjunction with the central hypotheses of this research to provide the foundation for the full path model of organizational commitment depicted in Figure 2.

Insert Figure 2 about here

The full path model derived from the theories and empirical findings discussed below is best described as a multistage, multivariate model comprised of a group of individual characteristics (stage 1 - motivation to work, job tenure and job satisfaction), two organizational/structural variables (stage 2 - decentralization and formalization), two specific aspects of the job (stage 3 - task characteristics and job stress) and the criterion variable organizational commitment). Mental health is embodied in the model for exploratory purposes.

To facilitate the understanding of the temporal arrangement of the construct variables in Figure 2, each hypothesis is presented as a bivariate relationship between a pair of exogenous variables (i.e. the relationship

Table 1
Operational Definitions of Construct

I. Exogenous Variables

- X_1 Motivation to Work (MTW): The extent to which salient individual needs are satisfied by the job.
- X_2 Job Tenure (JBT): The length of time the individual has been employed on the present job.
- X_3 Decentralization (DEC): The degree to which power and authority are extended throughout the organizational hierarchy and the extent to which employees are granted participation in work planning and organizational decision-making.
- X_4 Formalization (FOR): The extent to which work activities are specified and regulated by official rules and standard operating procedures and policies.
- X_5 Job Characteristics (JC): The extent to which the employee perceives that the job provides certain positive aspects such as autonomy or feedback.
- X_6 Job-Related Stress (JRS): The extent to which the employee perceives an imbalance between demands arising from characteristics of the job and the individual's perceived capability to respond.

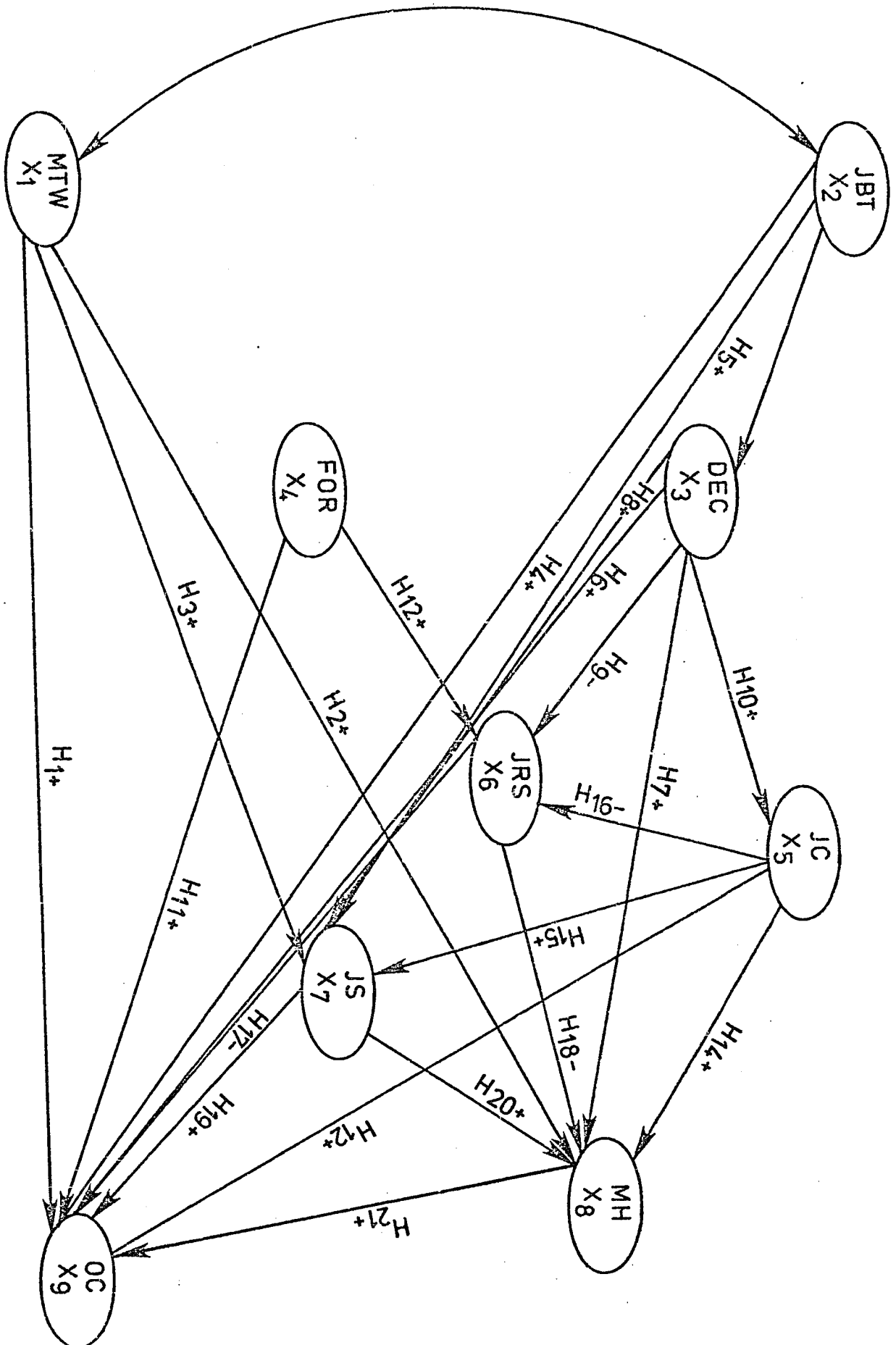
X₇ Job Satisfaction (JS): The degree to which the employee derives a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences (Locke, 1976, p. 1300).

X₈ Mental Health (MH): The degree to which the employee is free of disabling conditions.

II. Endogenous Variables

X₉ Organizational Commitment (OC): The degree to which the employee identifies with and is involved in a particular organization.

DETAILED MODEL OF ORGANIZATIONAL COMPETITIVENESS



between job tenure and job satisfaction), an exogenous and an endogenous variable (i.e. the relationship between job stress and organizational commitment). After stating the research hypothesis for each bivariate relationship, relevant theory(ies) and empirical findings bearing upon the two variables are reviewed. At the end of the discussion of each construct variable, the hypothesis is restated in view of the literature presented regarding the constructs encompassed by the model.

After the theoretical foundations have been laid in this chapter, the discussion will proceed to the description of the measures of the construct variables and their psychometric characteristics which will appear in conjunction with the methodology employed in this research (Chapter 3). The actual test of the model on five samples appears in Chapter 4 in the discussion of the results while the final chapter explores a number of alternative interpretations of the findings and their implications.

Hypotheses and Rationales

Work is an important source of need fulfillment for many people. Traditionally, work motivation (X_1) has been interpreted from two central and often competing perspectives. The first assumes a predominantly extrinsic motivation to work while the second invests work mainly with intrinsic meaning. Those who maintain an extrinsic value orientation view work principally in terms of its

instrumental character. That is, work supposedly possesses very little value in and of itself but rather serves as a means to certain ends that are not necessarily work related. Among these ends are financial security, a comfortable material standard of living, access to leisure activities, and social status both at the workplace and within the community. Those who invest work primarily with intrinsic motivation regard it not as a burden to be borne for its instrumental nature but as a central integrating principle of one's individual and social being (Andrisiani, 1978).

Work motivation is conceptualized here in the Maslowian sense including both intrinsic as well as extrinsic needs. Maslow's (1943) well-known approach is based on the idea of prepotency of needs which refers to the urgency of satisfaction. Basic to the theory is the thesis that needs at the bottom of the hierarchy are imperative in their demands. Only when the lower order needs are satisfied, do higher order needs become important.

Although the empirical findings testing all or parts of Maslow's propositions are rather discouraging (e.g. Wahba & Bridwell, 1973), Maslow's approach was chosen because it represents the first clear statement that management needs to recognize the importance of higher order needs. In addition, the theory implies that employees will be at different levels of the hierarchy at different times; that is, what will motivate one employee may not work with another. This latter aspect of the theory encourages the

assessment of individual differences which are important for this research since male and female as well as professional, white collar and blue collar employees were compared.

The early literature on work motivation (e.g. Herzberg et al., 1957) reported that intrinsic facets of the job were more important to men than women. However, subsequent studies (e.g. Centers & Bugental, 1966; Singer, 1974) indicated that males and females shared similar preferences with respect to intrinsic and extrinsic job factors. While it is difficult to determine whether the conflicting findings are due to the different populations sampled, the various methodologies employed or a real change (i.e. the increased participation of women in the workforce did generate more similarities and reduced differences), virtually none of the studies on sex differences in work motivation controlled for the fact that women have traditionally been concentrated in low level jobs which, by their very nature, offer little intrinsic motivation.

As a construct, motivation to work is the first variable in the proposed causal network which is not only predicted to partially determine organizational commitment but also be significantly related to job satisfaction and psychological well being. More specifically, the following causal relationships are hypothesized:

Hypothesis 1: The greater the employee's motivation to work (X_1), the stronger the person's commitment to the employing organization (X_9).

The concept of work motivation partially rests on the premise that men and women participate in organizations to fulfill personal needs. Organizations, on the other hand, want to be assured of a certain degree of employee attachment or preferably commitment. Because of this interaction between the worker and the organization, motivation is presumed to result from the correspondence between the needs of the individual and the characteristics of the job or the job situation (Salancik & Pfeffer, 1977). As a result, many theories of motivation, including Maslow's approach, fall into the category of need satisfaction models. The model predicts that employees with higher order needs which if satisfied by the present job will exhibit higher levels of commitment than individuals who are motivated solely by lower order needs.

Hypothesis 2: The greater an employee's motivation to work (X_1), the greater his or her sense of psychological well being (X_8).

Satisfaction of intrinsic as well as extrinsic needs is predicted to be positively related to mental health. Maslow's theory of a need hierarchy assumes that people seek to gratify their needs in an ascending order of complexity

and abstraction. Presumably jobs which frustrate the expression and fulfillment of higher order needs generate anxiety and tension in the job holder failing to motivate the person to perform well. Alternately, employees whose needs are not satisfied by the job may withdraw and if acceptable alternatives are available may quit as a consequence of their frustration.

Hypothesis 3: The stronger an individual's motivation to work (X_1), the greater his or her job satisfaction (X_7).

As Locke (1969; 1974) stated, job satisfaction and dissatisfaction are a function of the perceived relationship between what an employee wants from his or her job and what the individual perceives it as offering. Conceptually, overall job satisfaction has been viewed as an employee's evaluative reaction to a job that is determined by combining evaluative reactions to specific facets of the job. This definition of job satisfaction is shared by a number of investigators (e.g. Locke, 1969; 1976; Wanous & Lawler, 1973; Quinn & Mangione, 1973).

For the purpose of this research it was predicted that individuals with stronger higher order needs are more satisfied in their current job than employees with lower levels of work motivation. This hypothesis was predicated on the assumption that individuals with strong higher order

needs which are not satisfied by their current job tend not to remain in such a job.

The second variable in the model involves the length of service in the employing organization. The organizational literature is replete with studies demonstrating a linear relationship between job attitudes and tenure (and/or age) (e.g. Stevens, Beyer & Trice, 1978). With respect to organizational commitment and job satisfaction, the following hypotheses are rendered:

Hypothesis 4: The greater the length of service in the employing organization (X_2), the greater the commitment (X_9).

Tenure has been reliably related to commitment. For example, Hall, Schneider and Nygren (1970) hypothesized and found that organizational commitment increased as a function of time and devotion to a pivotal organizational goal. For every group in this study, job tenure in the U.S. Forest Service was associated with an increase in identification with the employing organization and increasing importance of such identification. Similarly, Sheldon (1971; see Chapter 1) found that employees with longer length of service (defined as ten years or more with the same organization) were committed regardless of position whereas younger employees in both higher and lower positions were more committed than those at the middle level.

Several interpretations have been suggested to account for the relationship between tenure and organizational commitment. March and Simon (1958), for instance, used the concept of specialization as an intervening variable. The longer the length of service, the greater an employee's degree of specialization. As time goes by, an employee's expertise becomes increasingly specific to his or her current organization and although the individual may become more and more indispensable to that organization, he or she is actually becoming less employable (i.e. more dispensable to other organizations).

Other research (e.g. Organ & Greene, 1974b) interpreted the relationship between tenure and commitment as a function of the development of confidence, competence and control on part of the employee. Organ and Greene (1974b), for instance, looked at increased tenure among senior scientists and engineers who reported a desire to stay with the organization once they felt in control of the work situation. While the relationship between tenure and organizational commitment seems to firmly established empirically on a variety of theoretical grounds, differences across samples are predictable. For example, despite the steadily increasing number of women in the labor force, it was predicted that for the appropriate comparison groups (white collar women vs. white collar men), women had less tenure, on the average, than their male counterparts. The availability of comparisons between males and females within

a given occupational category (although job level among white collar workers could not be controlled for in this research, see Chapter 3) as well as comparisons across occupational categories provided some insight with respect to sex differences in tenure.

Hypothesis 5: The longer the employee's job tenure (X_2), the greater his or her job satisfaction (X_7).

Wild and Dawson (1972) found job satisfaction to be positively related to both age and tenure. However, the relationship between job satisfaction and tenure is by no means clear. Some evidence from research on seniority and age suggests a curvilinear relationship (high satisfaction among young and old workers, low satisfaction among middle aged workers) or even a relationship of increasing satisfaction with age and tenure. Lawler (1973) suggested that the tendency of satisfaction to be high among older, long term employees seems to be produced by the effects of selective turnover and the development of realistic expectations about what the job has to offer.

Still other research (e.g. Gibson & Klein, 1970) showed a decreased in satisfaction with increased tenure which the authors attributed to the realization that the rewards of the job are not going to be as great as expected. The Gibson and Klein study was based on a sample of blue collar workers and the authors attributed the increase in

dissatisfaction with increasing tenure to the frustration of the worker at seeing others promoted to managerial positions. Many of these promotions were perceived as favoritism resulting in the acculturation of a we-they value system in the company.

The complex relationship between tenure and job satisfaction is further complicated by the sex of the worker. Hunt and Saul (1975) reported that overall job satisfaction was found to be more strongly associated with tenure for males than for females. In fact, there was no evidence of a relationship of any kind between length of service and job satisfaction in women. Depending upon the sex of the worker and particular satisfaction criterion used, company tenure can have a positive or negative relationship with job satisfaction.

It can be argued that the type of sample used in the various investigations may account for the conflicting findings of previous studies. A number of researchers have found important differences between the needs, expectations and work orientations of different types of workers. These motivational differences may influence the relationships between age, tenure on the one hand, and job satisfaction on the other. Research is needed which compares the age-satisfaction and tenure-satisfaction relationships obtained for workers at different occupational levels, different levels within the organization and with different patterns of needs and expectations. Since this research is based on

data collected from multiple organizational settings, it is hoped that the results will shed light on some of these issues.

At the second stage of the model, structural-organizational variables were drawn into the causal network which generate a new set of hypotheses. Alutto, Hrebiniak and Alonso (1970) concluded that organizational commitment cannot be understood as a purely social-psychological phenomenon, contrary to earlier assumptions (e.g. Ritzer & Trice, 1969). Rather, commitment to organizations (and occupations) appears to have important structural concomitants which must be taken into account.

Numerous scholars have attempted to describe empirically the underlying dimensions of organizational structure. Although many researchers have used Weber's (1947) basic model of bureaucracy, their findings have been somewhat at variance with respect to the structural components which define the dimensions of a bureaucracy. While there seems to be agreement among the various theorists that three of the main dimensions of structure are complexity, formalization and centralization, there is some disagreement as to whether control strategies such as centralization or formalization are part of one structure type or are separate, independent dimensions (Child, 1972).

This disagreement is due to the fact that there are researchers (e.g. Hall, 1962) who have relied heavily on a unidimensional interpretation of the Weberian construct of

bureaucracy. According to this interpretation, increasing degrees of specialization of labor, centralization of authority, formalization and standardization of activities mean increasing degrees of structure or bureaucratization (Reimann, 1973).

In contrast, there are other researchers (e.g. Blackburn, 1982) who argued for a multidimensional description of structure based on Weber's (1947) original conceptualization of the "ideal" bureaucracy organized around such principles as clearly defined hierarchy, specified rules and norms, and written recorded administrative procedures. Gordon (1969; 1970a; 1971), for example, derived the bureaucratic orientation construct directly from the structural schema of Max Weber to encompass four behavioral categories: self-subordination (e.g. willingness on part of the employee to have decisions made by higher authority), impersonalization, rule conformity, and traditionalism. According to Gordon (1970b) the military services which typically stress obedience to authority, a high degree of specialization, acceptance of expert judgment, formality of relationships, strict adherence to regulations and strong organizational identification approximate the bureaucratic model most closely. In his own work, Gordon used the concept of bureaucracy not only to describe organizational characteristics but also as a personality construct which reflects a commitment to the set of attitudes, values and

behaviors that are characteristically fostered and rewarded by and in bureaucratic organizations (Gordon, 1970b). Reiman (1974) concluded that with respect to the dimensional variety of structure that "the differences among research studies demonstrate that the existence of underlying and perhaps universal dimensions of structure is an open question" (p. 698). In other words, as Ford and Schellenberg (1982) suggested, the choice of structure may be a function of the decision makers' cognitive and motivational orientation and their ability to implement the chosen structure.

Probably one of the most frequently investigated structural dimensions is centralization/decentralization which has been a focal tenet in management ideology since the human relations movement. Participatory management or decentralization is, in part, the result of the missionary efforts of pioneers such as McGregor and Likert and has been reinforced by advocates of the organizational development movement as well as proponents of job enrichment, autonomous work groups and quality of work life reforms.

The centralization/decentralization dimension is a measure of the distribution of power within the organization. According to Hage and Aiken (1969), the fewer subunits (individuals) participate in decision-making and the fewer the areas of decision-making in which they are involved, the more centralized the organization. Centralized organizations with power resting with a few

individuals tend toward the status quo because their power enables them to protect their own interests and to veto changes that are likely to threaten them (Scott & Mitchell, 1976).

However, if organizations grow large and complex enough that management cannot centrally control all the information necessary for decisions, then the obvious solution is to make the decision-making power more widespread. It is generally assumed that decentralization improves decision-making in organizations because it allows a variety of views to emerge from different occupational groups and permits subordinates to contribute important information to the decision in question. This variety of opinion can lead to conflict, but also to a successful resolution of conflict and to problem solving. Moreover, in decentralized organizations decisions can be better implemented because workers know better what they are required to do, teamwork is facilitated and resistance to change reduced (Strauss, 1982).

The decentralized design is, however, seldom fully implemented since complex organizations cannot operate as a purely participative decision-making system. More typically certain categories of decisions are delegated to decentralized units such as those responsible for production control, personnel or some aspect of marketing while decisions over major capital expenditures and the evaluation of key management personnel are usually retained by central

authorities in the organization. Breaking down the organization into semi-autonomous decision-making units was clearly demonstrated by one of the sponsoring organizations (see Chapter 3) which delegated decisions regarding the quality of repair work on highly sophisticated missiles and airborne weapon systems to a subunit, the division of quality assurance.

Opportunities for participation in decision making have been correlated not only with other structural factors such as size but also affect employee attitudes and/or motivation. The following hypotheses link decentralization with organizational commitment as well as with some of the exogenous variables.

Hypothesis 6: The greater the employee's participation in organizational decision-making (decentralization) (X_3), the stronger the attachment to the organization (X_9).

Lowin (1969), in his review on participative decision-making (PDM) contrasted PDM with the more conventional hierarchical mode of operations in which decision and action functions are segregated in the authority structure (p. 69). In contrast, under participative decision-making, the very persons who arrive at decisions are also the ones to execute those decisions. Consequently, as Lowin argued, managers and subordinates are caught up in the subgoals of

the organization and are motivated to perform at a high level. In Lowin's analysis participative decision-making contributes to motive satisfaction of employees at all levels of the organizational hierarchy and to organizational goal attainment. Since the demands of the organization and the needs of its members are simultaneously met with participative decision-making, the decentralized organization is able to perpetuate itself.

How structural variations affect organizational commitment has been examined in two studies. Stevens et al. (1978) found that four structural variables - organization size, union presence, span of control, and centralization of authority were unrelated to commitment. Morris and Steers (1980), on the other hand, included functional dependence, perceptions of decentralization and formalization as structural variables and found several statistically significant correlations between organizational commitment and these variables. Previous work by Porter, Lawler and Hackman (1975) may provide an explanation for these seemingly contradictory findings. These authors suggested that employee attitudes and behaviors (i.e. commitment) are more directly influenced by structural elements which are relatively proximal to the work of the individual such as decentralization or work group size. The more distal structural elements such as size of the organization may not directly affect the worker.

The conflicting results regarding the relationship between decentralization and commitment may also be interpreted from a measurement perspective. As Fordhand and Gilmer (1964) noted, the theoretical conceptions of the relationship between organizational properties and individual behaviors and/or attitudes often emphasize the role of perception or organizational properties as intervening variables. Measures based on perceptions, although they may have theoretical meaning in their own right, usually confound characteristics of the individual and the organization. As Sells (1963) has pointed out, analyses of the interaction between the individual and the organization, require independent identification of the variation in each. To the extent that different researchers rely upon different measures, i.e. subjective/perceptual self-report inventories versus objective observation or even systematically manipulate organizational properties, different outcomes in studies examining organization structure and employee attitudes and behaviors are to be expected. The distinction between subjective/perceptual versus objective measures and the potential consequences for the model stemming from the use of perceptual measures will be reiterated in Chapter 3 in conjunction with the methodology.

Hypothesis 7: The greater the employee's participation in organizational decision-making (X_3), the greater the sense of psychological well-being (X_8).

This hypothesis is based on earlier findings reported by Ivancevich and Donnelly (1975) who found a positive relationship between decentralization and mental health in a study of salesmen in flat organizations who reported lower levels of anxiety than their counterparts in tall organizations. This study, designed as exploratory field research, examined the relationship between organizational structure and psychological well being (as measured by an anxiety-stress index) and suggested that there are distinct differences in the way employees in a flat organization perceive and respond to their jobs when compared to employees in tall organizations.

Hypothesis 8: The greater the employee's participation in organizational decision-making (X_3), the greater his or her job satisfaction (X_7).

Numerous researchers (e.g. Hackman & Lawler, 1971; Argyris, 1973; Herman, Dunham & Hulin, 1975; Herman & Hulin, 1972) noted the importance of structural factors in job satisfaction. Typically centralized, bureaucratic organizations require of their employees to perform jobs without the opportunity to participate in decisions about

them. Argyris (1973), for instance, has argued that it is the bureaucratic structure which conflicts with the needs of the individual for fulfillment, thereby contributing to dissatisfaction. Herman and Hulin (1975) demonstrated that structural characteristics accounted for a substantially larger proportion of variance in workers' attitudes toward the organization than did demographic characteristics. As Table 2 indicates, job satisfaction and decentralization have consistently shown significant correlations clustering around the .35 level.

Insert Table 2 about here

Finally some data exists indicating that the formal structure of the organization and the workers' position in the hierarchy affect men's satisfaction with work but does not significantly influence women's participation. Miller (1980), for instance, reported that men tended to be more dissatisfied in large, vertically organized firms than men employed in smaller organizations with fewer supervisory levels. For women, on the other hand, the correlations between organizational structure and job satisfaction were insignificant.

Organizations with various types of bureaucratic structures have a number of limitations which are likely to affect job satisfaction. Flow of communications is one of

Table 2
Correlations between Participation and Satisfaction
with Job and with Supervisor

Source	Job	Supervisor
Vroom (1960)	$r = .36^{**}$	
Smith and Tannenbaum (1968)	$r = .55^{**}$	
Bowers (1968)	$r = .23^{+}$	
Tosi (1970)	$r = .44^{**}$	
Ritchie and Miles (1970)		$F = 8.98^{**}$
Patchen (1970) ^a	$r = .22^{**}$	
	$r = .24^{+}$	
	$r = .23^{**}$	
Lischeron and Wall (1974)		$r = .35^{**}$
Falcione (1974) ^b		$r = .25^{***}$
		$r = .32^{**}$
		$r = .21^{+}$
		$r = .14^{+}$
Mitchell, Smyser, and Weed (1975)	$F = 172.87^{***}$	$F = 79.77^{***}$
Arvey and DeWhirst (1976)	$F = 19.1^{*}$	
Abdel-Halim and Rowland (1976)	$r = .32^{**}$	$r = .54^{**}$
Schuler (1976)	$F = 45.17^{***}$	

^a The first correlation is at the individual level ($N = 800$), and the second is at the group level ($N = 90$).

^b The correlations are with four separate questionnaire items on participation. No correlation with a combined index is reported.

⁺ Not significant at the .05 level.

^{*} $p < .05$.

^{**} $p < .01$.

^{***} $p < .001$.

Adapted from Mohr (1982)

them. Because of the hierarchal nature of more centralized organizations, people at the bottom often have difficulty communicating with those higher up who are making decisions concerning their jobs. Because of the distance between the top and the bottom of the organizational hierarchy, communications are often delayed which adversely affects job satisfaction.

Another problem in bureaucracies stems from the assumption that informal relationships are of little importance, so that employees can be moved from job to job as required. Similarly, it has also been argued that bureaucratic structures demand excessive conformity and allow inadequately for personal growth. Since the emphasis is on control and on the rigidity of formal relationships, the reality of informal relationships is often ignored (Scott, Mitchell & Birnbaum, 1981). The assumption that informal relationships are unimportant is unfortunate because the informal dealings and relationships with co-workers are for many employees a major source of satisfaction at work.

While much of the research on job satisfaction and organizational structure has focused on the low level jobs, Porter and Lawler (1964) have examined the effects of organizational structure on managerial job satisfaction. They found that organizations with flat, nonhierarchal structures provided greater satisfaction in relatively small organizations (under 5000 employees) but that there was no

relationship for large organizations. These findings were supported by later studies. Ivancevich and Donnelly (1975), for example, found salesmen in flat organizations to have higher job satisfaction and to perform more effectively than those in tall organizations. It seems clear from the available evidence that for smaller organizations, at least, job satisfaction is greater where the organizational structure is flat, bearing in mind that there are individual differences in what satisfies people in their jobs.

Different organizational structures reportedly satisfy different needs. Tall, bureaucratic structures, in which rules and procedures are formalized, are likely to appeal more to individuals who have strong security needs whereas flat structures provide greater satisfaction of higher order needs. Gordon (1970a) argued that the matching of bureaucratically oriented individuals with centralized structures is likely to result in increased job satisfaction. Creative individuals, on the other hand, as well as those who wish to take part in the decision-making process, are more likely to enjoy democratic structures.

Hypothesis 9: The greater the employee's participation in organizational decision-making, (X_3), the lower the perceived job stress (X_6).

As Schuler (1980) noted, there are few qualities of organizational structure which have been examined in the

stress research. Although no direct test of the effects of decentralization on perceptions of job-related stress exists, several conceptualizations of job stress (e.g. Beehr & Newman, 1978; French & Caplan, 1973; French, Rogers & Cobb, 1974) have identified organizational sources of stress. Beehr and Newman (1978), for instance, include organizational size, structure and climate as relevant organizational characteristics contributing to job stress. Similarly, Parasurman and Alutto (1981), in their examination of organizational antecedents of stressors, incorporated structural, intra-organizational factors such as the degree of routinization and closeness to supervision in their model. The latter variable corresponds to the supervisory span of control used in the Morris and Steers (1980) investigation.

A direct test of the relationship between decentralization and job stress was conducted by Margolis, Kroes & Quinn (1974) who found that nonparticipation in decisions about one's work was the most consistent and significant predictor of strain and job related stress. Working with a national representative sample of more than 1,400 workers, the authors reported that nonparticipation was significantly related to (1) overall poor physical health; (2) escapist drinking; (3) depressed mood; (4) low self esteem; (5) low job satisfaction; (6) low motivation to work, and (7) intention to leave one's job.

The general findings regarding perceived decentralization or participatory decision-making consistently point to increased employee involvement and attachment resulting from decentralization. Therefore, it was predicted that participatory decision-making reduces job-related stress.

Hypothesis 10: The greater the employee's participation in organizational decision-making (X_3), the greater the perceptions of positively valued job characteristics (X_5).

One of the major deficiencies of the now voluminous research on the job characteristics model outlined by Hackman and Oldham (1976) is the failure to examine the relationship of task characteristics to their organizational context (Roberts & Glick, 1981). Yet, as Oldham and Hackman (1981) point out, the job characteristic framework provides a conceptual model for understanding the relationship between organization structure and employee reactions. The authors argue that structural properties of the organization influence employee reactions by shaping the characteristics of their jobs. This view proposes that organizational structure 'presses upon' job characteristics, a notion advanced earlier by Indik (1968) who noted that increasing organizational size leads to increased specialization and segmentation.

A direct test of the relationship between structural characteristics and job characteristics was provided by Pierce and Dunham (1978b) who demonstrated that formalization and centralization were significantly and negatively correlated with employee descriptions of the amount of autonomy, identity, feedback and variety experienced in their jobs. According to Oldham and Hackman (1981) structural properties of an organization can affect employee reactions both by attracting individuals who are disposed to react to work in certain ways and also by shaping the characteristics of the employee's job. In view of these findings, a significant positive relationship between decentralization and task characteristics is predicted.

Hypothesis 11: The greater the degree of formalization (X_4) within the organization, the higher the individual's commitment (X_9).

Formalization is typically defined as the degree to which rules and procedures within a system are specified or adhered to (Pugh, Hickson, Hinings & Turner, 1968). It represents the extent to which jobs are governed by rules and specific guidelines. This structural characteristic of organizations is typical of bureaucracies.

The concept has also been approached from a role definitional perspective referring to the extent to which an

employee's role is defined by various formal documents, such as information booklets, organizational charts, policy manuals and the like (Reimann, 1974). In either case, as a strategy of control, formalization encompasses both the existence of rules and procedures, whether or not they are codified, and the degree of variation allowed therein (Ford & Slocum, 1977). According to Weber (1947), formalization is complementary to centralization in addition to facilitating the administration of the organization.

Measures of formalization (Chapter 3) have been attempted in a number of ways. For example, the number of rules that apply to jobs have been counted as they are found in formal job descriptions, rule manuals, or staff handbooks. In fact, the mere existence of such documents suggests a relatively high degree of formalization. Alternatively, one may count the number of rules and regulations that operate in the organization as a whole. These may be codified or unwritten as in the case of norms.

Hypothesis 11 is based on earlier findings by Organ and Greene (1981) who found that formalization tends to provide a basis for identification with the organization. In addition, formalization has also been found to facilitate access to resources, to lead to a sense of greater autonomy and power (Seeman, 1971) and to reduce role ambiguity (Organ & Greene, 1981). Morris and Steers (1980) hypothesized that increased formalization may influence commitment to some extent by facilitating both job and role clarity. On the

other hand, Hage and Aiken (1969) found that the greater the degree of formalization, the lower the rate of initiation of change. Rules and norms in their research were reported to restrict not only behavior but also thinking, creativity and initiative since they discourage better ways of doing things. Furthermore, they make the organization more rigid and promote homogeneity among its subunits. Consequently the implementation of change is made difficult, since even a minor change impacts on extensive portions of the organization thereby requiring a recodification of rules. Thus regulations, rules and job descriptions serve to stabilize the behavior of employees in an organization and make it more predictable and reliable. Obviously, a high degree of formalization mitigates against change.

Although not germane to this research which predicts a positive relationship between formalization and commitment, it is worthwhile noting that a number of studies (e.g. Blau, Heyderbrand & Stauffer, 1966; Child, 1972) showed that organizations with centralized decision-making processes in which top management tends to make most major decisions have relatively few rules and standardized procedures. Conversely, where the latter are numerous, top management tends to delegate decision-making to lower hierarchical levels.

Hypothesis 12: The greater the degree of formalization within the organization (X_4), the lower the level of perceived job stress (X_6).

Since formalization reduces role ambiguity and alienation and these two are a major source of stress (Organ & Greene, 1981), it is predicted that it will reduce perceptions of job-related stress. Role ambiguity usually reflects the absence of clarity about work objectives, about the job requirements and the responsibilities about the job and prospects about promotion (Kahn, 1981; Cooper & Marshall, 1976). In addition, the single or multiple roles which confront the individual may not be clearly articulated in terms of behaviors or performance levels expected (Kahn, Wolfe, Quinn, Snoek & Rosenthal, 1964). Experimental and longitudinal studies of the effects of role ambiguity reveal that lack of clarity about behavior expectations causes lower job satisfaction, unfavorable attitudes toward role senders, increased tension, anxiety, depression and resentment (e.g. Caplan & Jones, 1975). In fact, Sharit and Salvendy (1982) in their recent review of occupational stress that if any one variable were to be singled out as the predominant underlying source of occupational stress, it would be uncertainty which manifests itself in the form of job insecurity, task ambiguity or the effects of lack of knowledge of results. On the other hand, organizations with explicit policies and procedures can be expected to provide

a working environment characterized by low levels of uncertainty and turbulence which, in turn, have a positive effect on employee reactions.

After the individual and organizational factors, at the third stage of the model, two specific aspects of an employee's job, namely the characteristics of the tasks (summarized in the job characteristic model) he or she is required to perform and the presence or absence of job-related stress combine thereby completing the employee-job-organization network.

Hypothesis 13: The greater the employee's perceptions of positively valued job characteristics (X_5), the greater the organizational commitment (X_9).

Steers (1977) reported significant interrelationships between measures of perceived job characteristics and employee commitment. In addition, job characteristics may further influence organizational commitment via job stress leading to increased commitment because jobs high on the core dimensions may reduce stress in the work environment.

Hypothesis 14: The greater the employee's perceptions of positively valued job characteristics (X_5), the greater the sense of psychological well being (X_8).

The relationship between job characteristics and mental health has not been tested. Consequently, as stated

earlier, the purpose of this hypothesis is to explore the role of mental health within the general framework of the job characteristic model. However, there is a growing body of evidence from studies in a variety of organizational settings which suggests that occupational stress has been increasingly implicated in the etiology of poor mental health (Rose, Jenkins & Hurst, 1978; House, McMichael, Wells, Kaplan & Landerman, 1979). For example, Rose, Jenkins and Hurst (1978) observed the emergence of psychiatric symptoms in slightly over one half of a sample of experienced air traffic controllers, a population which is particularly at risk with respect of occupational stress. Controllers who perceived their work environment negatively and were dissatisfied with their work or the Federal Aviation Association were much more likely to develop either psychological disturbances or medical disorders. As the authors noted, the controllers who showed health changes were competent but felt alienated from their work.

Since Hypothesis 14 is not supported by existing empirical data, it should be considered exploratory in nature.

Hypothesis 15: The greater the employee's perceptions of positively valued job characteristics (X_5), the higher the degree of job satisfaction (X_7).

The Hackman and Lawler (1971) model suggests that job satisfaction is a function of the presence or absence of

positively valued task characteristics. The model implies that task properties such as autonomy, feedback and variety provide for the satisfaction of higher order needs. Individuals with higher order needs are predicted to be more or less satisfied to the extent that jobs possess the characteristics embodied in the model. This is what has been found, although the amount of variance in job satisfaction explained by job characteristics has varied. Brief and Aldag (1975), for instance, reported that the highest amount of variance explained in job satisfaction was 26 percent, which was variance explained by job autonomy in both general and work satisfaction. However, several of the correlations were not statistically significant, and in most cases, less than ten percent of variance was accounted for.

It is generally assumed that the relationship between job characteristics and job satisfaction is unidirectional with job perceptions affecting job satisfaction (Hackman & Oldham, 1975; 1976; Steers & Mowday, 1977). However, James and Jones (1980) reported results which supported the position that job characteristics and job satisfaction are reciprocally related and argued that job satisfaction can be viewed as a cause of job characteristics in so much as job satisfaction predisposes the employee to construct and maintain a psychological climate that is consistent with existing levels of job satisfaction. It has been hypothesized that individual differences in terms of needs and expectations concerning jobs determine perceptions of

job characteristics which in turn affect the level of employees affective reactions to jobs (Hulin, 1971).

Hypothesis 16: The greater the employee's perceptions of positively valued job characteristics (X_5), the lower the degree of job related stress (X_6).

In the many job redesign studies--in the field as well as laboratory--no attempt has been made so far to link the job characteristic research with some of the findings from stress research. Yet it has been known for decades that repetitive jobs which allow the worker little autonomy or task identity (e.g. traditional assembly work) are stressful and detrimental to the psychological well-being of the worker (Kornhauser, 1965). Studies of job enlargement-job enrichment (Hackman & Lawler, 1971; Janson, 1975) are generally in agreement with this hypothesis.

Hypothesis 17: The greater the degree of perceived job stress (X_6), the lower the organizational commitment (X_9).

This hypothesis departs from the assumption that job stress is an aversive experience which the employee is likely to remediate. The degree of aversiveness may manifest itself directly in the propensity to leave the organization. Thus, it is predicted that employees who

experience relatively high levels of job related stress have a low commitment to the organization because they are considering alternative forms of employment.

Hypothesis 18: The higher the perceived job stress (X_6), the poorer the employee's mental health (X_8).

Investigators have studied rather extensively the relationship between job stress and various job related variables such as performance, turnover, and absenteeism. In addition, the job characteristics are dimensions along which stress can be measured. Absence of feedback, for example, can be thought of as a source of stress. Job characteristics are only one of the many organizational stressors which have been associated with mental health outcomes. For example, Kavanagh, Hurst and Rose (1981) reported significant relationships between work dissatisfaction and a variety of psychiatric symptoms such as subjective distress, impulse control disturbance, alcohol abuse and wage-earner role disturbance. Similarly, organizational roles which are characterized by excessive demands, many responsibilities and overload correlate with mental health symptomatology such as somatic complaints, anxiety and depression (Kahn, 1981).

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The relationship between job stress and an index of mental health was first reported by Kornhauser (1965) who studied the conditions of automobile workers in Detroit to

determine the factors responsible for better or poorer mental health. Since 40 percent of the workers exhibited some symptoms of mental health problems such as anxiety, Kornhauser concluded that since job stress and mental health are related, decreasing stress will increase mental health. This conclusion has been substantiated for male workers. However, given the sparse research in this area, it is difficult to assess how far these findings apply to women workers because (a) women tend to be concentrated in different occupations than men and (b) because they carry additional responsibilities deriving from their roles as wives and mothers. Extra-organizational sources of stress need to be taken into account in assessing the stress-mental health relationship among women as well as commonly held assumptions about women's motivations and attitudes need to be more rigorously tested.

Hypothesis 19: The greater the degree of job satisfaction (X_7), the stronger the organizational commitment (X_9).

The subjective appraisal of job experiences involves both the cognitive assessment of what the job offers and a hierarchy of values that determines what is sought from employment (Locke, 1969). Job satisfaction or dissatisfaction can be the product of individual social and psychological attributes as well as objective assessment of job conditions.

As with tenure, the findings on the relationship between job satisfaction and sex are inconsistent. Some studies have found females to be more satisfied than males, some have found males to be more satisfied than females, some have found no differences (see Hulin & Smith, 1964). The University of Michigan Survey Center, for example, gathered nationwide data from 1969 to 1977 which indicated that job satisfaction declined markedly during the eight years and fewer workers felt their jobs were useful, relevant to future productivity, or equal to their skills. The authors (Staines & Quinn, 1979) observed that "the decrease was about equally distributed among five areas--comfort, challenge, financial rewards, resource adequacy, and promotions--but was absent for the sixth, relations with co-workers...Men reported greater declines in satisfaction between 1969 to 1977 than did women...The decline was virtually identical for white and black workers. Workers in the higher skilled occupations (professional, technical and managerial jobs) exhibited a smaller decline than did those in lower skilled occupations (p. 4). Data from another national survey (Quinn, Staines & McCullough (1974) revealed that rising levels of job dissatisfaction among women are becoming more and more prevalent as they enter or re-enter the workforce in increasing numbers in pursuit of social-psychological as well as economic rewards. To the extent that women are less willing to accept second class status in the labor market and have begun to scrutinize more closely

the inequality and discrimination they face in the job market, they have allegedly become more dissatisfied with their jobs.

Hypothesis 19 is based on previous research (e.g. Waters & Roach, 1979) which reported a significant correlation between job satisfaction and the intention to remain with the organization which is frequently used as an operational definition of commitment. In addition, the work of Mobley (1977) presented a causal ordering of job satisfaction preceding commitment and the work of Schoenherr & Greely (1974) on role commitment among American Catholic priests is strongly suggestive of this ordering. No literature thus far suggests the opposite causal ordering, although this author is aware of possible reciprocal effects between these two variables.

Hypothesis 20: The greater the degree of job satisfaction (X_7), the greater the sense of psychological well-being (X_9).

As in the case of stress, job dissatisfaction is predicted to have a negative impact on mental health. The classic investigation of the relationship between job satisfaction and an index of mental health has been reported by Kornhauser (1965) who studied the condition of automobile workers in Detroit to determine the factors responsible for better or poorer mental health. The results of this

research indicated that 40 percent of the workers exhibited some symptoms of mental health problems such as anxiety or depression. Kornhauser concluded with the proposition that since job satisfaction and mental health are related, increasing job satisfaction will raise mental health.

Additional evidence for a relationship between job satisfaction and both physical and mental health comes from a fifteen year longitudinal study in which measures of several physical and attitudinal variables were correlated with a follow-up criterion designated the longevity quotient which represented the ratio of life span following the original physical examination to actuarial predictions of life expectancy (Palmore, 1969). The results indicated that the initial measure of job satisfaction proved to be a better predictor of longevity than either the initial measure of physical health or the use of tobacco. Similarly, French and Kaplan (1970) reported that job satisfaction and mortality rates of coronary heart disease correlated ($r = -.49$) across 18 occupational groups. These results were substantiated by Sales and House (1971) who found that low levels of job satisfaction were correlated with high mortality rates.

Although it is clear that job satisfaction and mental health are related, the exact relationship is not clear. While this research postulates a significant positive relationship, it may be possible that level of job satisfaction and of mental health are mutually reinforcing

so that a decline of either satisfaction or health can have adverse effects on the other.

Hypothesis 21: Organizational commitment (X_9) and mental health (X_8) are positively related.

The influence of work-related variables upon adjustment outside the work situation has been called 'spillover' (Kornhauser, 1965). The spillover hypothesis suggests that workers' experience on the job carry over into the non-work arena, and possibly vice versa. The critical question concerns the causal direction of the relationship between work and non-work. Do the correlations support the causal mechanisms according to which work affects family relationships, leisure pursuits or other non-work activities or does non-work affect work or is there a third factor affecting both work and non-work? (Staines, 1982).

Since the literature on this complex issue is contradictory and fails to rule out a vice versa (non-work affecting work) relationship, (e.g. Iris & Barnett, 1972), it is hypothesized that mental health predicts organizational commitment. Meissner (1971) pointed out that because the work environment lacks the flexibility and malleability of non-work (workers rarely have the opportunity to choose among jobs the way they select leisure activities), it seems plausible to attribute the correlations between work and non-work to the impact of work

on non-work. However, as Kanter (1977) noted, family life may make demands on work (especially for female workers) which the work role must accommodate, just as work may require adjustments to family life.

Tables 3 and 4 summarize the propositions presented above.

Insert Tables 3 and 4 about here

As noted earlier in the discussion of individual construct variables, the organizational literature reports sex differences with respect to some constructs encompassed by the model. For example, despite the steadily increasing number of women entering into the labor force, the general notion of women as temporary, intermittent workers persists. It is a commonly held stereotype of working women, that they are less concerned about career related outcomes and professional growth than men are. A corollary of this stereotype is the belief that an individual who is not interested in getting ahead on the job will put forth the individual effort that is acceptable and therefore will be less committed to the employing organization. The model described here is intended to assess empirically the extent to which the stereotype of the female worker as the less committed employee is based in reality.

Table 3
The Causal Model of Organizational Commitment

Propositions	
1.	The greater the individual's motivation to work, the stronger his or her commitment to the employing organization.
2.	The greater an employee's motivation to work, the greater his or her sense of psychological well being.
3.	The stronger an individual's motivation to work, the greater his or her job satisfaction.
4.	The greater the length of service in the employing organization, the greater the commitment.
5.	The longer the employee's job tenure, the greater his or her job satisfaction.
6.	The greater the employee's participation in organizational decision-making, the stronger the attachment to the organization.
7.	The greater the degree of individual participation in organizational decisions, the greater the sense of psychological well-being.
8.	The greater the individual's participation in organizational decision-making, the greater his or her job satisfaction.
9.	The greater the individual's participation in organizational decision-making, the lower perceived job-related stress.
10.	The greater the individual's participation in organizational decision-making, the greater the perceptions of positively valued job characteristics.
11.	The greater the degree of formalization within the organization, the higher the individual's organizational commitment.

Table 3 (continued)

Propositions
12. The greater the degree of formalization within the organization, the lower the level of perceived job stress.
13. The greater the employee's perceptions of positively valued job characteristics, the greater the organizational commitment.
14. The greater the employee's perceptions of positively valued job characteristics, the greater the sense of psychological well-being.
15. The greater the employee's perceptions of positively valued job characteristics, the higher the degree of job satisfaction.
16. The greater the employee's perceptions of positively valued job characteristics, the lower the degree of job related stress.
17. The higher the degree of perceived job stress, the lower the organizational commitment.
18. The higher the degree of perceived job stress, the poorer the employee's mental health.
19. The greater the degree of job satisfaction, the greater the commitment to the employing organization.
20. The greater the degree of job satisfaction, the greater the sense of psychological well-being.
21. Organizational commitment and mental health are positively related.

Table 4
Hypotheses Summary Table

Hypothesis	Predicted Bivariate Relationship	Direction
H ₁	X ₁ X ₉	+
H ₂	X ₁ X ₈	+
H ₃	X ₁ X ₇	+
H ₄	X ₂ X ₉	+
H ₅	X ₂ X ₇	+
H ₆	X ₃ X ₉	+
H ₇	X ₃ X ₈	+
H ₈	X ₃ X ₇	+
H ₉	X ₃ X ₆	-
H ₁₀	X ₃ X ₅	+
H ₁₁	X ₄ X ₉	+
H ₁₂	X ₄ X ₆	-
H ₁₃	X ₅ X ₉	+
H ₁₄	X ₅ X ₈	+
H ₁₅	X ₅ X ₇	+
H ₁₆	X ₅ X ₆	-
H ₁₇	X ₆ X ₉	+
H ₁₈	X ₆ X ₈	-
H ₁₉	X ₇ X ₉	+

Table 4 (continued)

Hypothesis	Predicted Bivariate Relationship	Direction
H_{20}	X_7X_8	+
H_{21}	X_8X_9	+

Before discussing the methodology and proposed measures in the following chapter, three caveats seem to be in order. First, the proposed model constitutes only a first approximation of an integrated model of organizational commitment. Under no circumstances does the author wish to claim that the proposed temporal arrangement represents the best or only way to order the variables that is consistent with previous research. The model is based on my interpretation of existing empirical findings and represents the "all reasonable path approach" to hypothesis testing suggested by Hage (1972). Equally acceptable models including non-recursive models as well as models containing unanalyzed correlations or correlated disturbances (Werts, Linn & Joereskog, 1973) are entirely conceivable.

Second, because of the note of caution voiced in the first caveat, specification error is almost always a potential threat to the integrity of any structural model (Deegan, 1974; Specht, 1975). However, specification errors no longer represent an unsurmountable obstacle in techniques of causal inferences. Deegan (1974) developed a typology of specification errors including hypothesized structural models which incorrectly omit variables and outlined a strategy for making causal inferences that is based on knowledge of the effects of model specification error.

Finally, it should be noted that all of the variables are operationalized according to employee perceptions which are collected by their responses to the instruments

representing the construct measures. Since no 'objective' measures from company records seemed appropriate or available for the constructs of interest, the entire model essentially represents the employee's point of view. As such, p-p correlations are to be expected. Ideally, in addition to the employee, other individuals (supervisor, co-worker) would also characterize the job on the predetermined variables. As Kavanagh, Hurst and Rose (1981) noted, based on the use of what Scott (1977) termed person-person or p-p correlations, such correlations may be distorted due to common method bias. Inevitably, jobs can be perceived and characterized along multiple dimensions, and the choice of dimensions used may affect what is being observed. As Weick (1977) pointed out, to the extent that job dimensions are cognitively constructed and behaviorally enacted, additional data would be of value. However, few organizations afford the researcher this luxury since they do not exist as research laboratories for the convenience of the behavioral scientist.

CHAPTER 3

METHODOLOGY

Samples

Three organizations, two government agencies and a state university in the Southeast participated in this research yielding five samples which were distributed along a continuum ranging from professional to blue collar workers (see Figure 3).

Insert Figure 3 about here

A total of 1525 surveys were distributed throughout the three organizations of which 676 or 44.32 percent were returned which, in turn, yielded a total of 628 (92.89 percent) of usable copies. The distribution of the returned questionnaires is presented in Table 5.

Insert Table 5 about here

The Norfolk Naval Shipyard (NNSY) is the largest shipyard in the world exclusively devoted to surface ship and submarine repair and overhaul. It is the largest employer in the geographic area with over 10,000 employees in a broad range of occupation. Participants for this

FIGURE 3
SAMPLE CONTINUUM

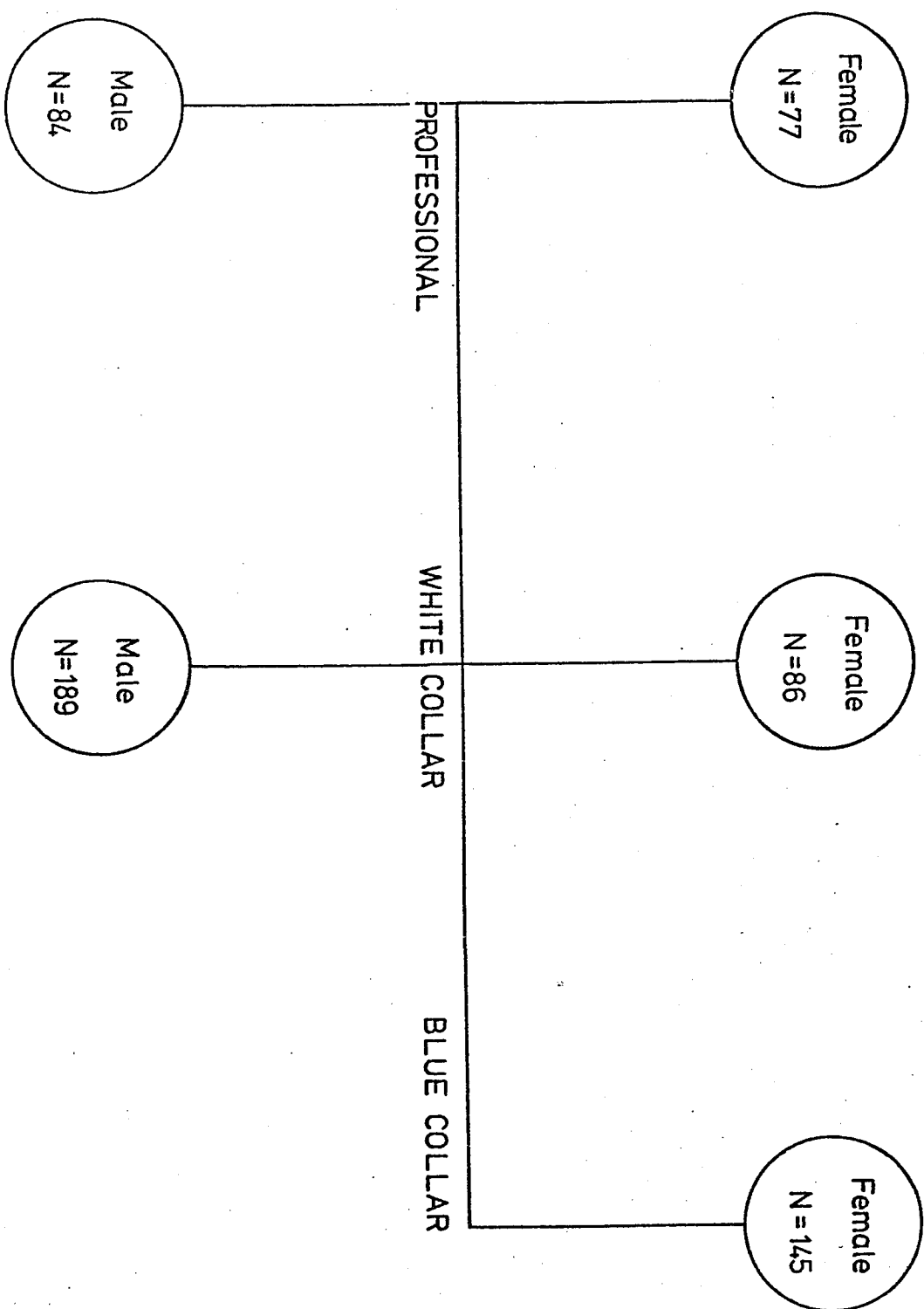


TABLE 5.

ORGANIZATIONAL COMMITMENT SURVEYS RETURNED

SAMPLE SITE	# OF SURVEYS DISTRIBUTED	# OF SURVEYS RETURNED	% OF SURVEYS RETURNED	# OF USABLE SURVEYS
NNSY ^a (F)	500	198	39.60%	150
ODU ^a (F)	161	70	43.47%	70
NARF/ ^a TOTAL (M/F)	864	408	47.22%	408
b* ^b FP	6	6	100.00%	6
MP	156	86	55.12%	86
MW	300	189	63.00%	189
FW	183	88	48.08%	88
LFB	219	39	17.80%	39
TOTAL	1525	676	44.32%	628 or 92.89%

^aNNSY = NORFOLK NAVAL SHIPYARD

ODU = OLD DOMINION UNIVERSITY

NARF = NAVAL AIR WORK FACILITY

b*FP=FEMALE PROFESSIONAL; MP=MALE PROFESSIONAL; MW=MALE WHITE COLLAR; FW=FEMALE WHITE;
 FB=FEMALE BLUE COLLAR

survey were drawn from shipyard's apprenticeship program which combines classroom instruction with on-the-job training to prepare women (and men) for nontraditional jobs such as riggers, welders, and boilermakers (see Appendix D for a description of the shipyard's apprenticeship program). The apprenticeship program lasts four years during which the trainee receives pay while learning the skills necessary to practice the selected trade. Upon completion of the four-year term, the apprentice is advanced to the existing rate of journeyperson in the selected trade. Overall, the apprenticeship program compares favorably in terms of career potential with the more traditional clerical positions in NNSY (see Table 6).

Insert Table 6 about here

Of the 500 surveys distributed at the NNSY, 198 or 39.60 percent were returned which resulted in 145 usable copies. The shipyard had the lowest response rate of the sponsoring organizations which was, in part, due to the fact that the EEO office which handled the distribution of the questionnaires insisted upon return of the surveys to the apprentice's immediate supervisor via a rather rigid routing system. Perhaps respondents were reluctant to participate because turning the questionnaire in to the immediate supervisor was seen as insufficient protection of anonymity.

Table 6
MAXIMUM CAREER POTENTIAL
CLERICAL VS APPRENTICE PROGRAM
January 1982

CLERICAL			APPRENTICE		
GRADE	HOURLY RATE	ANNUAL SALARY	GRADE	HOURLY RATE	ANNUAL SALARY
GS-3	4.92	10,235	WT-1	5.44	11,315
GS-4	5.42	11,490	WT-2	5.81	12,085
GS-5	6.18	12,854	WT-3	6.17	12,835
GS-6	6.89	14,328	WT-4	6.54	13,603
			WT-5	6.91	14,373
			WT-6	7.27	15,272
			WT-7	7.64	15,891
			WT-8	8.00	16,640
			WG-10	8.37	17,410

SECRETARY (GS-6)	CLERK SECRETARY (GS-5)	CLERK-TYPIST SECRETARY (GS-4)	CLERK, CLERK-TYPIST SECRETARY (GS-3)	GROUP SUPER- INTENDENT (GS-14/15)	SHOP SUPER- INTENDENT (GS-12/13)	SUPERVISORY ENGINEERING TECHNICIAN (GS-11/12) SUPERVISORY PRODUCTION CONTROLLER (GS-11/12) GENERAL FOREMAN (WS-12)	ENGINEERING TECHNICIAN (GS-11/12) PRODUCTION CONTROLLER (GS-9/10) FOREMAN (WS-10/11)	PLANNER & ESTIMATORS SHIP PROGRESSMAN SHIP SCHEDULER SHIP SURVEYOR (WD-08)	INSPECTORS, WORK LEADER (WL-12) SHOP PLANNER (WD-06)	JOURNEYMAN (WG-10)

Clerical positions at best peak out at the GS-6 level.

Apprentice Program prepares Journeyman for unlimited

The Naval Air Rework Facility (NARF) was the second participating organization. The NARF performs a complete range of rework and repair/modification of aircraft, engines, missiles and support equipment involving some of the most advanced airborne weapon systems.

A total of 864 surveys were distributed of which 408 or 47.22 percent completed and usable questionnaires were returned. Organizational distribution took place through the NARF's public relations office. Of the cooperating organizations, NARF had the highest response rate due to the fact that the administration gave the author numerous opportunities to present this project at various levels of the organizational hierarchy. A presentation for the commanding officer led to the endorsement by the captain (see Appendix B) and coverage in the NARF newsletter generated organizationwide visibility (see Appendix C).

Finally, the third sample was procured from female faculty members of a state university. Questionnaires were sent to all 161 female faculty members listed in the Old Dominion University's (ODU) directory; seventy or 43.47 percent of the surveys were returned after two follow-up memoranda through campus mail.

For the final analyses, 571 cases were selected consisting of 145 female blue collar workers drawn from NNSY. The 39 female blue collar employees from NARF were not included in the analysis in an attempt to reduce interorganizational variance. For the same reason, the six

female professionals from NARF were not combined with the female faculty sample, resulting in a total of 70 female professionals. The final occupational categories consisted of: 145 blue collar women from NNSY, 70 faculty women from ODU, 84 professional men, 186 male white collar employees, and 86 female white collar workers all drawn from NARF. The female white collar employees were primarily drawn from clerical staff while the white collar males held technical jobs.

Procedure

Each survey packet (see Appendix A) contained a cover letter delineating the rationale and purpose of this research and instructions followed by a set of standardized instruments measuring the research variables discussed below.

In the cover letter, it was pointed out that there were no right or wrong responses to any of the items and participants were encouraged not to dwell excessively on any particular item. In addition, respondents were assured that answers to all questions of the survey would be treated anonymously and confidentially and that names would not be associated with the data. The entire survey took 30 to 35 minutes to complete.

The general instructions described the rating process based on a seven point scale used throughout the survey. However, since the wording of the anchors varied somewhat from one section of the survey to another, each scale was

preceded by its own response scale using the anchors appropriate for that scale.

Finally, the packet included an official endorsement provided by the sponsoring organization (see Appendix B). Interested respondents were offered a personal summary of the results if they indicated their interest by writing "copy of results requested" at the end of the survey and filling their name and address in the space provided. At both government installations management requested that the author present the research findings in a series of meetings at the departmental and divisional levels as well as for the advisory boards of both facilities.

The Organizational Commitment Survey packet was distributed by the author through campus mail to the faculty sample. At NARF and NNSY, the distribution was handled by centralized offices because both organizations requested clearing and approval of a number of internal agencies including EEO, labor relations and a number of specific unions and administrative officers of certain departments.

Research Variables

Demographics

Biographic/demographic information pertaining to sex, age, education, marital status, income, and schooling, number of children, number of children under six, and job tenure was collected. Of these biographical indicators,

some have been associated with organizational commitment. Hurdis (1976), for instance, argued that familial responsibilities reduce labor commitment of married women compared to those of other marital groups. Thus, it seems reasonable to predict that women with considerable extra-organizational responsibilities as measured by the number and presence of young children in the family, will show less commitment to organizational goals than women who can devote most of their time and energy to the job.

Historically, the presence of young children has been the strongest impediment to the employment of their mothers (Smith, 1979). Sweet (1974) found that the relationship between maternal employment and the age of the youngest child was approximately linear from age two to age twelve with about a two percent rise in labor force participation with each year of increase in the age of the youngest child. Similarly, Cohen, Rea, and Lerman (1970) reported that the presence of a child under six years of age had the largest effect on women's labor force participation of any of the variables in their model of employment of married women.

Likewise, marital status can also affect people's commitment to their employing organization resulting in a decreased salience of organizational investments. Alutto et al. (1971) found that single respondents were more likely than their married counterparts to be favorably disposed to alternative employment situations.

Demographic variables such as age or number of children were not included in the structural model because they do not indicate the means by which they produce variations in organizational commitment. Price (1977, p. 24), in his study of turnover, made a distinction between correlates and variables which he called determinants. Determinants are analytical variables which are believed to produce variations in the dependent variable. Price argued that if the correct determinants are included in the model, the correlates (age, education, length of service, etc.) will not add significant explained variance. Age illustrates this easily. Some of the literature reviewed (e.g. Aranya & Johnson, 1975) supports a negative relationship between commitment and age; younger employees are usually less committed to the organization than older employees. Age per se, however, does not explain how the younger age produces a lower commitment. The answer to the "how" question must be found in the variables depicted in the structural model. Younger employees, for instance, may not identify with the organization because they have little opportunity to participate in decision making or have jobs that offer little opportunity. Not incorporating demographic variables into the model, however, does not mean that these demographic correlates of commitment will be ignored, especially since it is possible to make an indirect check on the model by estimating the influence of demographic correlates after the causal determinants have been included (Alwin & Hauser, 1974).

Motivation to Work

The first construct variable in the model is motivation to work. To measure respondents' need strength, a shortened version of the Need Satisfaction Questionnaire developed by Porter (1962) was used which assesses all of Maslow's need levels (security needs, esteem needs, and self-actualization needs) with the exception of physiological needs which are assumed to be relatively satisfied for employed men and women. Respondents were asked to indicate how important eight job related needs (e.g. the amount of prestige experienced from the job) were.

Porter's instrument is not intended to test Maslow's theory, per se, but is typically used to examine the relationships between need fulfillment, dissatisfaction and their importance to various organizational characteristics (Alderfer, 1972). Initially developed to measure managerial motivation, Porter (1962) saw the assessment of employee motivation to work as a means of determining his or her psychological fit with the job.

Decentralization

Hage and Aiken (1967; 1969) defined centralization as the extent to which power is distributed among social positions in organizations. In their research the authors stated that centralization is comprised of two subconstructs: concentration of decisions as measured by the participation in decision making subscale and

concentration of authority measured by the hierarchy of authority subscale (Dewar, Whetten & Boje, 1980).

The combined decentralization/hierarchy of authority scale consists of nine items. Four items are used to collect information about organizational decision making (e.g. how frequently do you participate in decisions regarding the adoption of new policies?) resulting in an index of actual participation. The remaining five items are used to gather information about work decisions (e.g. I have to ask my boss before I do almost anything). In view of the fact that centralization is often discussed as if there were no differences in decisions, the distinction between organizational decisions (participation in decision making subscale) and work decisions (hierarchy of authority subscale) is a welcome refinement with respect to the conceptualization centralization-decentralization.

A shortened version consisting of four decentralization items was used in this research. Dewar's et al. (1980) examination of the reliability and validity of the Aiken and Hage (1967; 1969) scales indicated that the reliability coefficients ranged from very good ($\alpha = .70$ to $.85$) to excellent ($\alpha = < .85$) and that both sets of scales appear to have high degrees of convergent and discriminant validity suggesting that they seem to measure the constructs for which they are intended. Nevertheless, there was room for minor improvement of these two scales, particularly the elimination of inconsistent referents ("I," "we," "a

person," "people in general," "the employee") and the somewhat confusing scoring system. A high degree of centralization on the subscale of participatory organizational decision making is indicated by a low score while a high degree of centralization of authority is indicated by a high score. Both of these problems were rectified by slight modifications in the wordings of the items and by adopting a uniform seven point scale to measure both subconstructs.

Formalization

Extensive research on formalization has been conducted by Aiken and Hage (1967; 1969) as well as by Pugh, Hickson and their colleagues (1968) at the University of Aston in Britain. Both groups approach the concept of formalization differently. Hage and Aiken (1969) define formalization in terms of the importance of rules. They state:

giving orders is only one method for creating a unified organizational effort. An organization could not continue for very long if each operation required a decision from those who have responsibility to make them. Organizations daily guidelines for their operations; these guidelines are furnished by rules, the repository of past experience (p. 90).

The 15-item formalization scale yields five separate indices which define five subconstructs: (1) job

codification (e.g. how things are done around here is pretty much up to the person doing the work); (2) rule observation (e.g. employees are constantly checked for rule violations); (3) rule manual (e.g. there is no rules manual); (4) job descriptions (e.g. there is a complete description for my job); and (5) specificity of job descriptions (e.g. going through the proper channels is constantly stressed). Individual scores are summed across the subconstructs to obtain an overall index of formalization. Although the test developers reported no ranges of means for the five subscales, the higher the means, the higher the degree of formalization. Reported reliabilities ranged from .76 to .85. The shortened version used here consisted of the five job specificity items.

Validity results with respect to the formalization scale have been quite consistent. Hage and Aiken (1969) predicted a positive relationship between routine work and formalization; that is, the more routine the work, the greater the degree of formalization. Significant relationships were reported between routine work on the one hand, and rule manual, job description and specificity of job description on the other. The remaining two subscales (job codification and rule observation) produced nonsignificant relationships with routine work. As Dewar et al. (1980) noted, not all formalization constructs appear to have high degrees of convergent and discriminant validity. Part of the problem seems to be a function of the poor

logical fit between the content of the item and the definition of the subconstruct. For example, job codification was defined as "the degree to which the job descriptions are specified." However, only one of five items measuring this construct dealt specifically with rules about the job.

The second approach to the measurement of formalization (Inkson, Pugh, & Hickson, 1970) defines formalization as the "extent to which rules, procedures, instructions, and communications are written." On this scale, the information can be collected through interviews or questionnaires. The instrument assesses the availability of various types of organizational documents such as contracts of employment, organization charts, written statements of policies, etc.

Taken together, these two measures provide an adequate index of formalization. The Inkson et al. approach has the advantage of relying on the use of documents and interviews, a needed addition to the self-report method dictated by the Aiken and Hage scale. However, because of logistical problems and security stipulations required by two of the participating organizations, the Aiken and Hage scale was employed in this research to minimize intra-organizational disruptions and facilitate the data collection process.

Job Characteristics

The Job Characteristic Survey (JDS) (Hackman & Oldham, 1976) is the most widely used measure in the assessment of

the core job dimensions embodied in the job characteristic model. Subsequent to the development of this instrument, however, some factor analytic studies have questioned the dimensionality of the JDS. Dunham (1976) reported that a single factor solution accounted for the explained variance in a study of 3610 employees of a large merchandising corporation. Other solutions were examined but Dunham concluded that they provided little support for the five dimensions proposed by Hackman and Oldham. Dunham, Aldag and Brief (1977) analyzed JDS data from five different organizations that were divided into 20 subsamples and concluded that for different samples two, three, four, or five factor solutions may be appropriate. These data suggest that the five factor solution cannot be assumed unless empirically determined for a particular sample.

Sims, Szilagyi, and Keller (1976) adapted items from the Hackman and Oldham scale and developed the Job Characteristics Inventory (JCI) which consists of 33 items with reliabilities ranging from .62 to .80. Comparing the JDS and JCI, Pierce and Dunham (1976) reported that the internal consistency for the JCI was slightly higher than for the JDS, a predictable result given the greater number of items per subscale on the JCI. Moreover, an oblique factor rotation confirmed the four a priori dimensions (variety, autonomy, feedback, and task identity) of the JCI but not the JDS. Although Sims et al. (1976) claim that they presented evidence for convergent and discriminant

validity, this evidence is somewhat tenuous in the absence of variables other than the task characteristics, i.e. the authors failed to include independent observations of tasks and consequently the discriminant/convergent matrix reflects a considerable amount of method variance. Although the JCI was employed in this research because it appears to be a psychometrically slightly superior instrument, the question of dimensionality has to be empirically demonstrated for each job sample under study. Dimensionality, as in the case of the JDS, is to some extent a function of sample.

Job-Related Stress

Because of the controversy over the use of the term stress (e.g. Beehr & Newman, 1978; Mason, 1975a; Mason, 1975b; Selye, 1975) Kavanagh, Hurst and Rose's (1981) definition of job stress as a perceived imbalance between a demand arising from a job or organizational characteristic (a stressor) such as work overload and the person's perceived capability to respond was adopted for the purpose of this research. The measure that most closely approximates this definition of stress is a questionnaire developed by the Michigan group (Caplan, Cobb, French, van Harrison & Pinneau, 1975). In this research, a shortened version of the Caplan et al. scale was employed using four of the most frequently used a priori dimensions. These included (1) overload (e.g. how often does your job require you to work very fast?) which in several studies by the

Michigan group has been found to produce numerous psychological and physiological strains such as job dissatisfaction, increased smoking, and elevated cholesterol all of which are risk factors in heart disease; (2) role conflict (e.g. how often do persons equal in rank and authority over you ask you to do things which conflict?); (3) role ambiguity (e.g. how often are you clear on what your job responsibilities are?), a dimension which is associated with job dissatisfaction as well as threats to mental and physical well being; (4) underutilization of abilities (e.g. how often can you use the skills from you previous training?). The range of reliabilities for these stress subscales ranges from .75 to .86 and validities were demonstrated in previous studies (Caplan et al., 1975).

Job Satisfaction

Levels of job satisfaction were assessed using the short form of the Minnesota Satisfaction Questionnaire (MSQ) composed of 20 items most closely correlated with the 20 scales making up the long form (Weiss, Davis, England & Lofquist, 1967). The item content covers the following facets of job satisfaction: ability utilization, achievement, activity, authority, compensation, co-worker, creativity, independence, recognition, social status, supervision, variety, and working condition. The MSQ measures intrinsic, extrinsic, and general job satisfaction. For the intrinsic scale, the coefficients ranged from .84 to

.91; for the extrinsic scale from .77 to .92; and for the general satisfaction scale the coefficients varied from .87 to .92.

Mental Health

A shortened 20-item version of Goldberg's (1972) General Health Questionnaire (GHQ) was employed to assess the tendency toward psychiatric disturbance. The GHQ, a self-administered screening device, is concerned with two sets of symptoms: the ability to carry out one's normal functions and the appearance of new symptoms of a distressing nature. The instrument has been described (Goldberg & Hillier, 1979) as comprising a set of questions which form a "lowest common multiple" of symptoms which can be encountered in the various differentiated syndromes of mental disorders. As the authors stated, the purpose of the GHQ as a screening device is to identify potential cases, leaving the task of identifying actual cases to the psychiatric interview (Goldberg, 1972). Overall, the item content focuses on here and now situations and little attention is paid to how the individual has felt or behaved in the past.

The original measure resulted in a 60-item version with the "best" 30, 20, and 12 items for use with respondents whose time is at a premium. Psychometric evidence indicates that the test-retest coefficients (six months apart) range from .75 to .90 for various groups of patients; split-half

reliability was found to be .95. The results of a validation study which correlated GHQ scores with independent overall clinical assessments yielded a coefficient of .80. In addition, the GHQ has been validated as an effective guide to minor psychiatric morbidity in the general population (e.g. Henderson, Duncan-Jones, Byrne, Scott & Adock, 1979) and has been found to have substantial convergent validity with other measures of psychiatric disturbance (e.g. Finlay-Jones & Murphy, 1979). For example, Liff (1981) who used the GHQ with a sample of female factory workers reported that three factors were significantly associated with high GHQ scores (indicative of psychological disturbance). These were whether a woman worked full or part time, the extent to which the household was dependent on her wages, and her feelings about the job.

Stafford, Jackson & Banks (1980) obtained GHQ scores from young British respondents who had left school because of low academic qualifications. A substantial correlation was observed between employment status and the GHQ measure of morbidity, i.e. employed male and female youngsters had significantly lower GHQ scores. Similarly, Finlay-Jones and Murphy (1979) used the 60-item form of the GHQ and found that single unemployed women showed significantly greater psychiatric morbidity than single women who were employed. In both studies paid employment proved to be a significant predictor of psychological well being.

Organizational Commitment

Recently, Mowday et al. (1979) developed the 15-item Organizational Commitment Questionnaire (OCQ) to provide a fairly constant indicator of employee commitment for most working populations based upon multiple and diverse samples. Factor analysis performed to examine the homogeneity of the OCQ items with respect to the construct they purport to measure resulted in a single factor solution supporting Mowday's et al. (1979) conclusion that the OCQ is measuring a single underlying attitude construct.

Table 7 summarizes the construct measures used.

Insert Table 7 about here

Structural Modeling

Causal models using path analysis techniques and structural equation modeling are being increasingly utilized in industrial/organizational research since behavioral scientists are becoming more and more aware of the gap between theories on the one hand, and research techniques on the other. The structural or causal modeling approach, also referred to as path analysis, offers a systematic way out of this impasse. Indeed, there are those who argue that path analysis has emerged as one of the most powerful heuristic tools in the social sciences (e.g. Schumm, Southerly & Figley, 1980) because causal modeling provides a systematic

Table 7

Summary of Instrumentation: Construct Measures and Representative Items

CONSTRUCT	MEASURE	# OF ITEMS	SAMPLE ITEMS
1. Motivation to work	Need Strength Questionnaire (Porter, 1962)	8	The opportunity for personal growth
2. Decentralization	Decentralization Scale (Hage & Aiken, 1969)	4	How frequently do you participate in the decision to hire new staff?
3. Formalization	Formalization Scale (Aiken & Hage, 1969)	8	Whatever situation arises, we have procedures to follow in dealing with it
4. Job Characteristics	Job Characteristics Inventory (JCI) (Sims et al., 1976)	33	The amount of variety on my job

Table 7 (continued)

CONSTRUCT	MEASURE	# OF ITEMS	SAMPLE ITEMS
5. Job-Related Stress	Job Stress Questionnaire (Caplan et al., 1975)	13	How often does your job leave you with little time to get things done?
6. Job Satisfaction	Minnesota Satisfaction Questionnaire (MSQ) (Weiss et al., 1967)	20	The chance for advancement on this job
7. Mental Health	General Health Questionnaire (GHQ) (Goldberg, 1977)	20	I am getting edgy and bad- tempered
8. Organizational Commitment	Organizational Commitment Questionnaire (OCQ) (Mowday et al., 1979)	15	I would accept almost any type of job assignment in order to keep working for this organization

way of building block upon block so that theories can become cumulative and alternative explanations that are not consistent with the data can be rejected. A sampling of recent applications attesting to the increasing popularity of path analysis includes the study of job satisfaction (Kalleberg, 1974; Ruch, 1979), educational and occupational aspirations (Rosen & Aneshensel, 1978), salesmen's compensation perceptions (Oliver, 1977), psychological success in work organizations (Griffin, 1977), the psychological effects of occupational conditions on women (Miller et al., 1980) and turnover (Miller & Price, 1981).

Essentially path analysis refers to the process of (1) constructing a causal model using structural equation techniques; (2) estimating the path coefficients from the data, and (3) testing the model (Duncan, 1966; Asher, 1976; Kenny, 1979). It is a procedure for systematically combining the use of partial and multiple correlation to study the causal relations among a set of antecedents (independent or exogenous variables and dependent (or endogenous variables, i.e. to be explained by the model) variable(s) at different points in the model.

When causal models are used in theory building and system analysis, as is the case in this research, the goal is to define a set of equations which, in some sense, correspond to actual causal processes in the real world, i.e. one seeks a set of equations which permit predictions of how a change in any one variable in the system affects

the values of the other variables in the system. Once a causal model has been constructed and the structural equations corresponding to the hypothesized linkages have been defined, the parameters of the model which represent the causal impact that variables have on one another, can be estimated and the model can be tested. The resulting path coefficients derived from the regression equations reflect the relative contribution to explained variation of the dependent variable(s).

The theory of organizational commitment as specified (1) constructing a causal model using structural equation this model was translated into structural equations which considered all the relevant constructs simultaneously making their bivariate relationships explicit. Most users of path analysis recommend that a competing theory be specified at the same time since a test of competing theories can only be made when one theory can be represented as part of another, i.e. the path diagrams are identical except that certain paths can be taken as known, usually zero (Bentler, 1981, p. 425).

The first phase of the structural modeling process, the actual construction of the model, was described in Chapter 2. As indicated in the discussion of the hypotheses stated above, the model may be viewed as a three stage model comprised of three groups of exogenous variables: (1) individual characteristics (X(1), X(2), X(7)); (2) organizational variables (X(3) and X(4)); job characteristics

(X(5) and X(6) which are predicted to be significant determinants of X(8) and X(9). The disturbances associated with X(8) and X(9) are disturbance terms which include elements such as measurement error or the effects of other, unmeasured causes on the endogenous variables (James & Jones, 1980). Ordinarily disturbances are conceived as having been brought about by variables that have been omitted from the theoretical system.

Methodologically, path analysis requires a number of basic assumptions. First, the total variation of the endogenous variables is assumed to be determined by a linear combination of the variables in the model. In models in which variation of an endogenous variable is not determined by prior exogenous, measured variables, a residual variable, which is assumed to be uncorrelated with the set of constructs immediately determining the variable under consideration, is introduced to account for the variance of the endogenous variable(s) not explained by measured variables (Asher, 1976).

Path analysis also assumes relatively low correlations among predictors (Feldman, 1975; Kenny, 1979). While the exogenous variables in a particular causal system may be correlated among themselves, their intercorrelations are not explained by the model. The exogenous variables are assumed to be outside the causal system and represent the crucial operational requirements for analyzing the system empirically. The thorny problem with multicollinearity is

that if two or more exogenous variables are correlated, then the correlation between the exogenous variables can make a contribution to the correlation between the endogenous variables.

Blalock (1971) argued that multicollinearity should be tolerated when despite its presence each variable in the collinear set adds significant causal information. The general point of this argument is that if multicollinearity cannot be sufficiently eliminated, little is to be gained by trying to remove it by the introduction of one or more relevant variables.

Finally, data for path analytic techniques must meet all the multivariate regression assumptions and it is assumed that the effects among variables are linear and additive.

The utility of path analysis as a model building and interpretive tool lies in its power to decompose the bivariate correlations into direct and indirect effects. The direct effect of one variable on another is simply that part of its total effect which cannot be transmitted via intervening variables. In other words, it is the effect which remains when intervening variables have been held constant. Indirect effect, on the other hand, are those effects of a variable's total effect which are transmitted or mediated by variables specified as intervening between the cause and effect. Indirect effects indicate the extent to which a given effect occurs because the manipulation of

the antecedent variable of interest leads to changes in other variables which, in turn, influence the dependent variable(s). The total effect of each variable causally prior to organizational commitment and mental health, then, is decomposed into direct and indirect effects through variables that intervene between the exogenous and endogenous variables.

Estimation of the path coefficients represents the second step in path analytic procedures. Path coefficients are most usefully interpreted by comparing the relative magnitude of the coefficients within the same model based on the assumption that a change in one variable produced a specified change in another.

In sum, then, the structural equation modeling techniques are statistical procedures that allow estimating the direct and indirect effects of a set of variables for which causal ordering is hypothesized with non-experimental data has definite advantages including the emphasis on explanation rather than description (Strotz & Wold, 1971) and a pattern of interpretations that makes explicit the rationale and assumptions underlying the analytic procedures while simultaneously forcing the discussion of results to be at least internally consistent (Duncan, 1966). If nothing else, such an approach forces the investigator to place primary concern on theoretical and conceptual issues.

CHAPTER 4

RESULTS AND DISCUSSION

The findings from this research naturally fall into five sections. The first section covers the results derived from the factor analyses of the exogenous and endogenous variables. In Section Two, the reliabilities for the factored scales are reported. The third section presents the results of the initial path analyses for the two endogenous variables for the five samples. Section Four summarizes two successive iterations of path analyses to trim the model after the deletion of nonsignificant paths. The last section is intended to pull together the findings from all the analyses.

Factor Analyses

In the first phase of the analyses, the dimensionality of each scale as applied to the present total sample was examined in a series of factor analyses. These analyses were performed for two primary reasons: (a) to independently confirm the factor structure of previously established scales for this study, and (b) to derive the factor structure of those scales for which no factor loadings were located in the published literature. Factor analysis using a principal axis solution with the square of the multiple correlations as estimates of communalities in the diagonals was used to find the most

reasonable way of reducing the number of items which made up each scale. All initial factor extractions used the Kaiser criterion (eigenvalue greater than or equal to 1) as the rule-of-thumb relying on the default option available with SPSS. Multifactorial scales were rotated using varimax rotation to the final solution. The factor analyses as well as the subsequent reliabilities were based on the total sample of $N = 571$ comprised of the subsamples described in Chapter 3.

Porter's (1962) eight-item need satisfaction questionnaire yielded a single factor solution. Items measuring higher order needs (e.g. the feeling of self-fulfillment a person gets from being in my job position) showed uniformly higher factor loadings than the two items measuring lower motives to work (e.g. the feelings of security in my job). The factor structure of the need satisfaction questionnaire indicated that the one factor solution reflects a single construct of higher order needs.

According to Hage and Aiken (1969) the centralization/-decentralization scale has two subconstructs: (a) the concentration of decisions referring to resource distribution of policy formation, the indicator being the participation of decision-making scale, and (b) the concentration of decisions, referring to the performance of tasks, the indicator being the hierarchy of authority scale. These two factors were derived from the full scale which consists of four decentralization and five hierarchy of authority items.

Factor analysis of the shortened version used in this research showed a one factor solution. The first four items, which measure participation in various types of organizational decisions (e.g. adoption of new policies, hiring new staff) accounted for 96.1 percent of the common variance. The fifth item, an indicator of the hierarchy of authority scale, was dropped from subsequent analyses because of low factor loading.

The formalization scale yielded a two factor solution. However, because of unclear item loadings, the first three items which supposedly measure two different subconstructs (job codification and rule observation) were excluded in subsequent analyses.

Extracting factors from the Job Characteristic Inventory (JCI) resulted in a seven factor solution consisting of the following factors: friendship opportunities, which loaded on six items rather than five as in most published research. The additional item (# 24) led to a reinterpretation of this factor as social aspects of the job for this sample. The second factor extracted, feedback, was originally defined by seven items. Two items were deleted after this analysis because they had factor loadings on all factors. The third JCI factor, variety, was split into two factors, one of which was defined by two items loading on variety per se, while the second factor was defined by items loading on a factor which was labeled repetition (e.g. to what extent are your job duties

repetitious?). The remaining factor loadings, task significance, autonomy, and task identity were consistent with previous research; consequently, these subscales were retained in their original form in the subsequent analyses.

Factor analysis of the shortened 13-item Caplan et al. job stress questionnaire resulted in a three factor solution (underutilization of abilities, workload, and role conflict) compared to the four factor solution of the full scale (same factors as above plus role ambiguity). The three role ambiguity items had ambiguous factor loadings across all three factors (and as shown in Table 9, no internal consistency) and were therefore deleted.

Past factor analytic studies of the Minnesota Satisfaction Questionnaire (e.g. Weiss et al., 1967; Ivancevich, Matteson & Preston, 1982) consistently revealed a three factor (intrinsic, extrinsic, and general job satisfaction) solution for the 20-item instrument. In the factor analysis performed here, four factors were extracted. The first factor on which six items loaded, turned out to be a method factor which revolved around the term "the chance to" (e.g. the chance to work alone on the job, the chance to be somebody in the community). Instead of loading on the general satisfaction factor, a sizable proportion of items had loadings on this method factor. This factor was deleted from further analyses.

The remaining three factors were made up of three items loading on satisfaction with supervision, two items with

loadings on pay/promotion satisfaction, and two with loadings on a factor that was labeled satisfaction with the ability to use independent judgment on the job. The first two factors, although small, correspond to the extrinsic factor typically extracted from the MSQ. The final factor, satisfaction with the freedom to use independent judgment on the job, approximates the intrinsic factor. The remaining items had ambiguous loadings, split across factors or were not substantial. Consequently they were deleted for the final scale.

Since the factor loadings of Goldberg's (1972) General Health Questionnaire (GHQ) have not been reported in the literature, the primary purpose of factoring this scale was to determine the factor structure of the GHQ. The first factor in the matrix indicated a social desirability factor (e.g. I feel easy to get along with other people) rather than a mental health factor. Of the remaining items with substantial loadings, three items defined a general mental health factor, four items loaded on a factor measuring depressive tendencies while three additional items loaded on a factor describing somatic complaints. As in the case of the scales factor analyzed above, items with nonsubstantial loadings were deleted.

Factoring the final scale, the Organizational Commitment Questionnaire (OCQ) resulted in two factors which were similar to the solution obtained by Mowday et al. (1979) as shown in Table 8. Because of the similarity in

factor structure in the original and present research, the nine positively scored items were retained for the remainder of the analyses. Mowday et al. recommended the use of the shortened version (positively worded items) based on their findings that the percentage of common variance explained by the second factor (negatively scored items) ranged from 2.4 to 15.5, while the percentage of variance explained by the first factor accounted for 83.2 to 92.6 percent for the various samples in the test development study. Since this factor analysis yielded similar results (Factor 1 accounted for 90.4 percent of the variance, Factor 2 for 9.6 percent) the decision was made to base the remaining analyses on the shortened version of the OCQ.

Insert Table 8 about here

Nevertheless, it should be noted that the factor structure of the OCQ does not seem to be as clear as when reported in the original results. Although Mowday et al. (Mowday, 1982) favor the one factor solution, concerns about the nature of the second factor have emerged. Because of the fact that the items loading on Factor 2 are reverse-scored while none of the reverse-scored items are loaded on Factor 1, it is possible that Factor 2 is not a substantive factor but resulted from an artifact of measurement. Although it is possible that such an artifact contributed to the separation of factors, Angle and Perry (1981) suggested

Table 8
Rotated Factor Loadings from Factor Analysis for the
Organizational Commitment Questionnaire

Item	Original Research* (N = 600)		Present Research (N = 571)	
	Factors**		Factors	
	1	2	1	2
1. I am willing to put in a great deal of effort beyond that normally expected in order to help this organization be successful.	.67		.53	
2. I talk up this organization to my friends as a great organization to work for.	.72	.34	.76	
3. I feel very little loyalty to this organization.		.34		.33

Table 8 (continued)

Item	Original Research* (N = 600)		Present Research (N = 571)	
	Factors**		Factors	
	1	2	1	2
4. I would accept almost any type of job assignment in order to keep working for this organization.	.39		.39	
5. I find that my values and the organization's values are very similar.	.66		.65	
6. I am proud to tell others that I am part of this organization.	.75	.35	.79	.36
7. I could just as well be working for a different organization as long as the type of work was similar.		.40		.45
8. This organization really inspires the very best in me in the way of job performance.	.55	.50	.62	.40

Table 8 (continued)

Item	Original Research* (N = 600)		Present Research (N = 571)	
	Factors**		Factors	
	1	2	1	2
9. It would take very little change in my present circumstances to cause me to leave this organization.		.54		.46
10. I am extremely glad that I chose this organization to work for over others I was considering at the time I joined.	.55	.55	.60	.39
11. There's not too much to be gained by sticking with this organization indefinitely.	.34	.63		.73
12. Often, I find it difficult to agree with this organization's policies on important matters relating to its employees.		.37		.49
13. I really care about the fate of this organization.	.62		.60	

Table 8 (continued)

Item	Original Research* (N = 600)		Present Research (N = 571)	
	Factors**		Factors	
	1	2	1	2
14. For me this is the best of all possible organizations for which to work.	.61	.45	.63	.50
15. Deciding to work for this organization was a definite mistake on my part.	.49	.58		.54
% Variance	92.6	2.4	90.4	9.6
Eigenvalue	6.30	.50	5.96	0.63

*Mowday, Personal Communication, June, 1982

**Only factor loadings above .30 are shown

***Reverse-scored items

that two conceptually distinct clusters of items exist which appear to differentiate between respondents' commitment to the goals of the organization and the commitment to retain their organizational membership. While beyond the scope of this research, it seems obvious that the stability of the factor structure of the OCQ requires further assessment and cross validation.

Based on these factor analyses, the factor-based scales presented in Table 9 were built by summing all the variables with substantial loadings and ignoring the remaining variables with minor loadings. The rule of thumb typically used in this context is to consider factor loadings less than .30 as not substantial.

Insert Table 9 about here

Kim and Mueller (1978) justify the practice of factor-based scales construction by arguing that the factor analytic model is often not expected to fit the data completely because of (a) non-random measurement errors in the variables, and (b) minor factors unspecified and conceptually unrelated to the domain of interest may account for some of the observed correlation. Consequently,

there is a basis for not taking the specific values obtained in a given factor solution at value. The conservative stance is to view

Table 9
Factor-Based Scales Derived From Factor Analyses

Construct	Number of Factors	Number of Items	Alpha (N=571)
1. Motivation to work	1. Need to work motive	8	.889
2. Decentralization	1. Participation in organizational decision-making	4	.838
3. Formalization	1. Job specificity	5	.765
4. Job Characteristics	1. Feedback	4	.845
	2. Variety	5	.440
	3. Task Significance	2	.754
	4. Autonomy	6	.800
	5. Task Identity	3	.848
	6. Social Aspects	6	.808
5. Job Related Stress	1. Work Load	5	.807
	2. Role Conflict	2	.789
	*3. Role Ambiguity		-.076
	4. Underutilization of abilities	4	.836

Construct	Number of Factors	Number of Items	Alpha (N = 571)
6. Job Satisfaction	1. Satisfaction with supervision 2. Pay Satisfaction 3. Satisfaction with freedom to use independent judgment	2 2 2	.826 .637 .850
7. Mental Health	1. Social Desirability 2. General Mental Health 3. Depression 4. Somatic Complaints	5 2 2 3	.703 .670 .831 .709
8. Organizational Commitment	1. Organizational Commitment	9	.881

*These factors were deleted from the final scales because of lack of internal consistency

the factor structure found by the factor analysis as only suggested, indicating some clustering in the data but no more (pp. 71-72).

The controversy over factor vs. factor-based scales may be broached from both a statistical and a conceptual perspective. Statistically, the indeterminacy of factor scales speaks for the construction of factor-based scales since it may not be possible to identify exactly the common factors from the variables because each variable also contains a unique component which is inseparately mixed with the common part of the variable (Harman, 1976). Since the most one can do is to obtain estimates of the values of common factors from the variables, there is always some indeterminacy associated with creating factors scales. Conceptually, the score resulting from a linear combination of factor scores (e.g. combining the factor scores of autonomy, variety, feedback, friendship opportunities) is difficult to interpret.

While there is some concern with the efficiency of simple summing as a means of representing information contained in raw variables (e.g. Wang & Stanley, 1970; Wainer, 1976), Kim and Mueller (1978) concluded that both factor scales and factor-based scales have a legitimate place in practical research. Furthermore, since this research is concerned with examining the relationships between variables in a conceptual model of organizational

commitment, it seems better to have measures of the variables that are more clear conceptually.

Moreover, the correspondence between scale and the underlying construct can be assessed by using the fidelity coefficient. Drasgow and Miller (1982) recommend that if the factor analytic model provides a reasonable description of the set of data being examined and if items can be obtained that adequately assess the full breadth of a construct, then a scale factor correlation may be used as a quantitative index of the scale-construct relation. The fidelity coefficient which is typically smaller than the validity coefficient (especially if items have substantive loadings on several factors) reflects the validity of the scale with respect to the underlying construct.

The tables for the factor analyses are included in Appendix C as supplementary statistics.

Reliabilities

Estimates of internal consistency using Cronbach's alpha were computed for the 23 factors which define the eight construct variables presented in Table 9. They ranged from .889 for Porter's need satisfaction questionnaire to -.007 for the role conflict measure of the Minnesota Satisfaction Questionnaire. For the purpose of this research, internal consistency estimates of .70 or higher were deemed satisfactory. Two measures did not meet the

minimal standard of reliability: the variety subscale of the JCI ($\alpha = .440$) and the role conflict scale ($\alpha = -.077$) from the job stress questionnaire. Consequently these two scales were deleted reducing the total number of subscales to 21. The two remaining subscales with below standard reliabilities, the pay/promotion satisfaction factor from the MSQ ($\alpha = .637$) and the general mental health factor from the GHQ ($\alpha = .670$) were retained because they are critical to some of the male/female and occupational group comparisons germane to this research. However, the strength of these comparisons must be tempered by the lower internal consistency of the measures involved.

Overall, inspection of Table 9 shows that Cronbach's (see Table 9) alpha coefficients are within reasonable limits, indicating acceptable reliabilities for most measures. However, one needs to remember that measurement error is always problematic in linear structural equation analyses because the magnitude of the regression coefficient is underestimated in direct proportion to the amount of error in the measurement of the independent variable.

Whenever possible, maximum likelihood confirmatory factor analysis should be used to separate measurement error from the indices of the principal constructs (see Joereskog, 1969, 1970). This procedure requires that there be multiple indicators of each concept. With such information, it is possible to infer from the covariation of the indicators the degree to which each of them reflects the underlying

construct they are hypothesized to measure and the extent to which each reflects error. Although multiple indicators existed for all of the constructs in the model, they would have more than doubled the already lengthy survey; thereby, increasing the already difficult task to find organizations willing to participate in this research.

Path Analyses

Path analysis was employed to test the relationships proposed in the discussion in Chapter 2. Elementary discussions of the technique are presented in Kenny (1979) and Kerlinger and Pedhazur (1973, pp. 305-331) which have been briefly summarized in Chapter 3. As indicated earlier, essentially the existence of a hypothesized linkage between an exogenous and an endogenous variable is represented by the significance of the standardized partial regression coefficient (i.e. the standardized beta weight or path coefficient) which is obtained when a variable in the model is regressed on all variables hypothesized to be antecedent to it. Conversely, in the absence of a direct effect of exogenous on endogenous variables, the corresponding regression coefficient should not attain significance. To facilitate the move through the models that follow, Table 10 summarizes the codes for the predictor variables employed in the path analyses for easy referencing. As presented in Table 10, motivation, decentralization, formalization and

organization remained as single factor solutions. Based upon the factor analyses presented above, the core dimensions were measured by five factors (feedback, task significance, autonomy, task identity, social aspects of the job), job stress by three factors (work load, role conflict, underutilization of abilities), job satisfaction by three factors (supervision, pay/promotion and ability to use independent judgment satisfaction) and mental health by four factors (social desirability, general mental health, depression, somatic complaints).

Insert Table 10 about here

Because this is a recursive model with unidirectional paths, ordinary least square regression analysis can be used to obtain the path estimates (James & Singh, 1978). Thus, path analysis serves as a method for decomposing and interpreting the linear relationships among the variables in the recursive model by generating beta coefficients associated with given linkages according to the ordinary least square method.

Since the relative importance of each construct in the model is determined by the magnitude of the path coefficient, paths with beta weights lower than .05 were considered nonsignificant and were deleted when an iterative

Table 10
Codes for Predictor Variables Employed
in the Path Analyses

Code	Number of Variable in Model	Descriptor
JBT 1	1 (JT)	Job Tenure
JBT	2 (OT)	Organizational Tenure
MTW	3	Motivation to Work
DEC	4	Decentralization
FOR	5	Formalization
JCI	6	Feedback
JCI	7	Task Significance
JCI	8	Autonomy
JCI	9	Task Identity
JCI	10	Social Aspects of the Job
JRS	11	Work Load
JRS	12	Role Conflict
JRS	13	Underutilization of Abilities
JOS	14	Supervisor Satisfaction
JOS	15	Pay/Promotion Satisfaction
JOS	16	Satisfaction with Freedom to Use Independent Judgment

Table 10 (continued)

Code	Number of Variable in Model	Descriptor
MEH	17	Social Desirability
MEH	18	General Mental Health
MEH	19	Depression
MEH	20	Somatic Complaints
ORC	21	Organizational Commitment

procedure was used to trim the original model. Predicted hypotheses were considered supported when the standardized path coefficients satisfied this criterion and in the predicted direction.

In order to determine for which of the subsamples the path analyses provided a relatively "good" explanation for the dependent variables and for which subsamples there was a relatively "poor" explanation, two criteria were employed: (a) the degree of congruence between the hypothesized model and the obtained path coefficients; and (b) the power of the model as measured by the relevant R^2 value for each subsample which provides an estimate of the predictive power of the antecedent variables in the proposed model of organizational commitment. Both criteria are incorporated in the discussion of the results.

Throughout the analyses, standardized path coefficients were used in making the comparisons of the factors leading to organizational commitment and mental health in female and male workers across occupational groups. Kim and Mueller (1976) asserted that intergroup comparisons can only be made on the basis of unstandardized coefficients, unless it can be shown that the variances of the variables among the groups are equal in size. However, following the discussion of Hargen (1976), it is this author's position that for the social psychological processes examined here, standardized coefficients are to be preferred because the objective of this research was not to establish causal relationships that

are assumed to be invariant from one population to another, in which case the use of standardized coefficients is appropriate.

In order to systematize the results from the path analyses, the presentation of these data is divided into four subsections. The first section summarizes the significant predictor-criterion relationships for the two endogenous variables for the five different samples to obtain an estimate of how the model "behaved" with each sample. In the second section, the results of the path analyses are discussed in detail with respect to each occupational category. Section 3 briefly presents the results of two successive iterations for theory trimming purposes. Theory trimming proposed by Simon (1957) and Blalock (1964; 1971; 1979) is a procedure for obtaining a greater parsimony of fit. Deleting certain paths from the model sets the corresponding path coefficients to zero and implies that the correlations between two variables with deleted paths can be explained by indirect effects only (Heise, 1969). If the original correlations among the variables can be closely approximated through the "regeneration" process using only the relationships in the more parsimonious model (i.e. some paths have been deleted), one can conclude that the actual correlations in the data are consistent with the more parsimonious model (Kerlinger & Pedhazur, 1973).

Overview of the Results. In order to obtain an overview of how adequately the proposed model explained organizational commitment and mental health for the various samples, the results for the two dependent variables were abulated across the five subsamples prior to examining subgroup differences. In order to assess initially which of the predicted antecedents showed significant correlations with the two endogenous variables across samples, the global construct variables upon which the hypotheses in Chapter 2 (see Figure 2) were based served as a referent. In other words, the constructs listed in the summary table (see Table 11) refer to the unitary construct variables as they were conceptualized prior to the factor analyses.

With organizational commitment as the primary criterion, Table 11 shows that motivation to work was significantly related to commitment for all samples except for the faculty women. Similarly, job tenure was a significant determinant of commitment for all samples except blue collar women. The two organizational variables showed somewhat more variation across occupational groups. Decentralization was considered unimportant by both blue and white collar female samples, while formalization had no effect on the commitment of female professionals. For both male samples, on the other hand, decentralization had a significant impact on commitment but this effect differed in terms of its directionality. All of the remaining variables in the model, the job characteristics, job stress, job

satisfaction, and mental health were significantly correlated with commitment with the exception of the core job dimensions which made no contribution to the commitment of blue collar employees. However, as will be discussed in the following section, there were considerable variations in these significant relationships across sample.

Insert Table 11 about here

Inspection of Table 11 indicates that the overall findings conform to the theoretical expectations set forth in Chapter 2 despite variations across samples and, of course, variations in the magnitude of the associations. The more detailed breakdown of the relationships between exogenous and endogenous variables follows in the next section.

Looking at the R^2 s across samples, it is not surprising to notice that the male white collar sample which represented the largest subgroup ($N = 186$) provided the "best" test of the model not only in terms of the hypothesized model - path coefficient convergences but also in terms of the magnitude of the R^2 . Since R^2 is the traditional criterion for evaluating a regression equation, it is generally thought that the larger the R^2 , the better the model. While it would be rewarding to predict 100 percent of the variance, this is often not feasible or even

Table 11
Hypothesized Model-Path Coefficient Convergences
Criterion: Organizational Commitment

PREDICTOR	SAMPLES				
	FBS (N=145)	FPO (N=70)	MPN (N=84)	MWN (N=186)	FWN (N=86)
	$R^2=.4752$	$R^2=.4967$	$R^2=.5491$	$R^2=.5914$	$R^2=.4527$
1. Motivation to Work	S*	NS**	S	S	S
2. Job Tenure	NS	NS	S	S	NS
3. Decentralization	NS	S	S	S	NS
4. Formalization	S	NS	S	S	S
5. Job Characteristics	NS	S	S	S	S
6. Job Stress	S	S	S	S	S
7. Job Satisfaction	S	S	S	S	S
8. Mental Health	S	S	S	S	S

*Significant

**Nonsignificant

possible. Kenny (1979) noted that many empirical phenomena are not perfectly predictable in both theory and practice. Although a high R^2 is desirable, the goal of causal modeling ultimately is to test theory rather than to maximize R^2 . Thus, with 59 percent of the variance accounted for and no predictor variables dropping out, the proposed model performed adequately, at least for the entire sample.

Subgroup Analyses. The following results are based on the 21 factor-based scales derived from the factor analyses. For each subsample, the path analyses are presented separately for organizational commitment as the criterion variable. Prior to the factor analyses, the predictions were made from unitary constructs (i.e. job characteristics rather than making specific hypotheses regarding the individual factors of feedback, task significance, autonomy, task identity, and social aspects of the job). Thus, for the purpose of these subgroup analyses, a hypothesis was now considered substantiated. If at least one of the factors defining the construct showed a significant relationship with the criterion. If more than one subconstruct was significantly correlated with the outcome variable, the summary table for each subsample which restates the predicted bivariate relationship, its directionality, and the obtained path coefficient, shows the range of correlations between a set of paths representing the same construct and the dependent variable. For example, if all three job satisfaction factors, (satisfaction with

supervision, pay/promotion and the opportunity to use independent judgment on the job) correlated significantly with commitment, then the factor with the lowest and the factor with the highest correlation are reported in the summary table. In some instances, both positive and negative path coefficients were obtained for factors within a multidimensional construct. In these cases, a +/- sign was entered in the appropriate column of the table indicating that the exact nature of the relationship remains questionable. Nonsignificant paths were deleted since the postulated hypotheses failed to attain significance.

Organizational Commitment in Blue Collar Women (N = 145). As shown in Figure 4 and Table 12, of the 20 predictors, nine variables were found to have statistically significant influence on commitment (see Table 11) of female blue collar workers. As can be seen in Figure 4, job satisfaction and mental health were the strongest determinants (see Propositions 19 and 21 in Table 3). More specifically, the major, internally consistent paths in the model were generated by the three job satisfaction variables, satisfaction with supervision ($p = .1009$), satisfaction with pay/promotion ($p = .2194$) and satisfaction to use independent judgment on the job ($p = .2291$). Blue collar women who were satisfied with the supervision they received, the wages they earned and the opportunities for advancement available to them were the ones who were most committed. The third satisfaction factor, the ability to

apply independent judgment to the task at hand, actually had the strongest impact ($p = .2291$) among the satisfaction variables. This finding seems to contradict the stereotype of blue collar work as routinized, unlikely to provide any rewards for the worker.

Insert Figure 4 about here

Insert Table 12 about here

Although Table 12 reports a positive overall correlation between mental health and organizational commitment, the actual nature of the relationship between these two variables is somewhat more ambiguous. Two of the positive mental health factors, and especially the factor representing overall psychological well being (GMH) had high positive correlations with commitment. For Depression and Somatic Complaints, high scores suggestive of mental disturbance resulted in positive correlations with the criterion.

FIGURE 4

DETERMINANTS OF ORGANIZATIONAL COMMITMENT IN BLUE COLLAR WOMEN (N=145)

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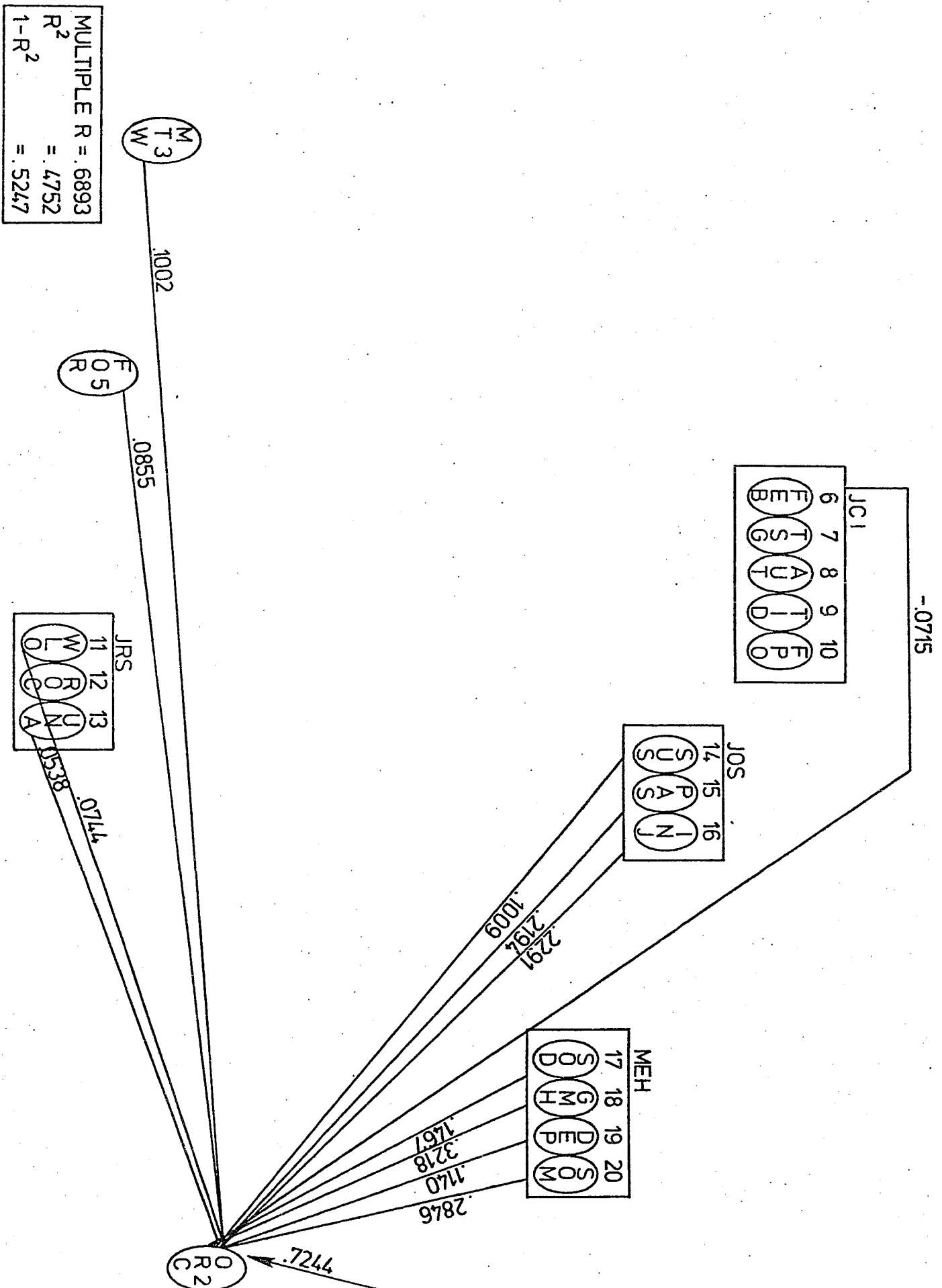


Table 12
 Determinants of Organizational Commitment in
 Blue Collar Women
 (N = 145)

H_0	Predicted in Bivariate Relationship	Direction	Obtained Path Coefficient	Supported?
H_1	X_1X_9	+	+/-	?
H_2	X_1X_8	+	-.1092	YES*
H_3	X_1X_7	+	+/-	?
H_4	X_2X_9	+	NS	NO
H_5	X_2X_8	+	+/-	?
H_6	X_3X_9	+	NS	NO
H_7	X_3X_8	+	.1093	YES*
H_8	X_3X_7	+	.1173-.3986	YES
H_9	X_3X_6	-	OD**	NO
H_{10}	X_3X_5	+	.0831-.2492	YES
H_{11}	X_4X_9	+	.0855	YES
H_{12}	X_4X_6	+	+/-	?
H_{13}	X_5X_9	+	-.0715	NO
H_{14}	X_5X_8	+	+/-	?
H_{15}	X_5X_7	+	.3746	YES
H_{16}	X_5X_6	-	-.1782	YES

Table 12 (continued)

H_0	Predicted in Bivariate Relationship	Direction	Obtained Path Coefficient	Supported?
H_{17}	X_6X_9	-	.0744	NO
H_{18}	X_6X_8	-	+/-	?
H_{19}	X_7X_9	+	.2291	YES
H_{20}	X_7X_8	+	+/-	?
H_{21}	X_8X_9	+	.3218	YES

* Tables for all possible paths for each occupational group are available from the author

** Correlation was in the opposite direction that predicted

Of the remaining variables, only motivation had a relatively important influence on commitment as hypothesized in Proposition 1 (see Table 3). Since Porter's (1962) need satisfaction questionnaire basically measures higher order needs, the notion that blue collar workers, and blue collar women in particular, attach more importance to extrinsic aspects of the job was not supported for this blue collar sample. This finding was reinforced by the fact that one of the core job dimensions, namely the opportunity to develop friendships on the job (FPO) and typically viewed as an extrinsic factor, had no impact on blue collar women's commitment. The women in this subsample were, in part, committed because their jobs apparently satisfied some intrinsic needs. All too often, it seems, we patronizingly assume that only professionals have complex feelings about their jobs and that they require more challenge and gratification from their work than blue collar workers.

Somewhat unexpectedly, none of the job characteristics produced significant path coefficients. Four of the factors resulted in nonsignificant paths while the effect of the fifth factor, feedback, was very small and in the opposite direction. Finally, the overall contributions of formalization and two of the stress factors, workload and the ability to utilize skills acquired previously, were minimal. The remaining variables, the two tenure factors and decentralization dropped out altogether.

The picture that emerges for the blue collar women indicates that the various facets of job satisfaction are the single most important predictor of organizational commitment. This finding is consistent with the fact that blue collar jobs offer attractive alternatives for women because of the wages and benefits they provide. Because of the shortage of well-paying jobs in occupations that women have traditionally occupied, more women are drawn to the skilled trades. In addition to the pay incentives, recent government regulations have also contributed to the increasing number of "hard-hatted" women. In the spring of 1978, for instance, the Office of Federal Contract Compliance programs set goals and timetables for female participation in federally funded construction projects costing over \$10,000. Of these projects, women were required to make up 6.9 percent by April 1981 (Business Week, 1978). A second regulation called for the establishment of registered apprenticeship and training programs with the attempt to enroll women in numbers equal to half the proportion of women in the workforce. Since women now make up 51 percent of the national labor force, over 25 percent of individuals entering registered apprenticeship programs would be women (Lederer, 1979).

Although women in the skilled trades have registered significant gains in employment, they still represent a small percentage (approximately 6 percent of skilled trade workers). Men's traditional domination of such jobs has in

large part occurred because of deep-rooted cultural assumptions about women's lack of mechanical aptitude and physical strength. Even today for women who have the mechanical competence and physical prowess to perform blue collar jobs, it is still difficult to penetrate the world of the skilled trades because of the closed character of many of the trade unions. In addition, since the attention of the industrial/organizational and general literature continues to emphasize the needs and problems faced by women in the profession, the problem of blue collar women are vastly underrepresented in the literature.

Organizational Commitment in White Collar Women (N = 86). The second sample consisted of female white collar workers mostly drawn from secretarial and other clerical jobs. As depicted in Figure 5, for these women motivation to work ($p = .2625$) was the strongest predictor of organizational commitment. In contrast to the blue collar women, organizational tenure did have a significant positive impact on commitment while job tenure had a negative effect. In other words, with increasing length of service in the organization, but with fewer total number of years on the job, the more committed to organizational goals white collar women became. This finding indicates that white collar women who are tenured in a given job accurately perceive of their chances for advancement within the organization as decreasing, the longer they remain in the same job. The work of Kanter (1977) suggests that workers today often find

challenge and satisfaction through a succession of similar but qualitatively different jobs. For example, a key punch operator may develop elementary computer programming skills, move into data analysis, and eventually supervise an information processing department. Such diversity, however, has rarely been captured in the design of most white collar jobs.

Insert Figure 5 about here

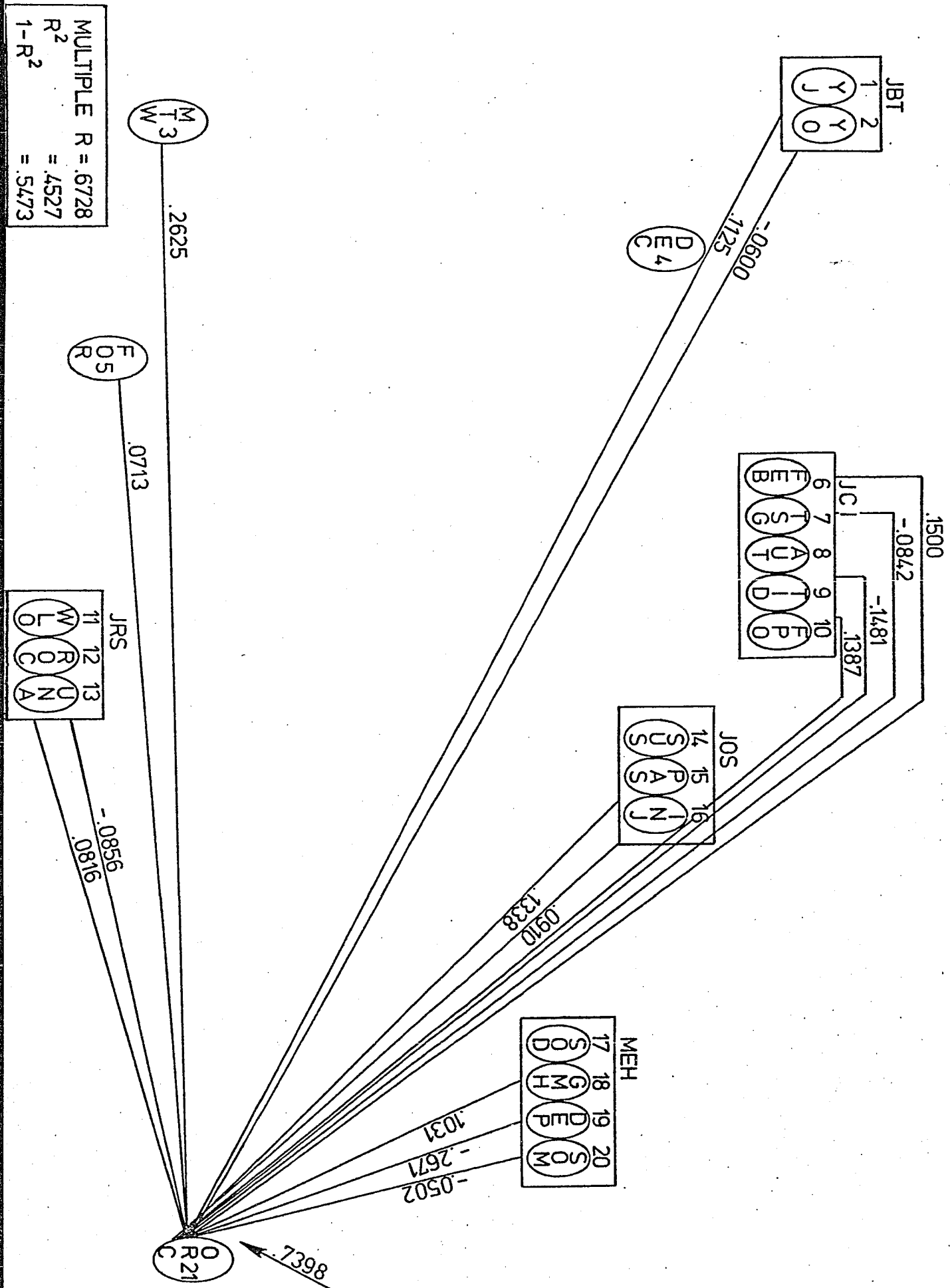
As in the case of the blue collar women, organizational-structural variables essentially had little effect on commitment since decentralization produced a nonsignificant effect while formalization had a relatively small impact.

While basically none of the core dimensions contributed to commitment among blue collar women, two of the core dimensions had a significant positive impact for white collar women. The results for the JCI indicated that both autonomy ($AUT = p = .1500$) and the opportunity to develop social interactions through the job ($FPO = p = .1387$) were important for commitment. The results with respect to the friendship factor imply that white collar women may try to compensate for the routinized task and low wages that characterize clerical work by using the job to satisfy affiliative needs.

Of the three job satisfaction variables, two, pay satisfaction ($p = .1338$) and satisfaction with the ability

FIGURE 5
DETERMINANTS OF ORGANIZATIONAL COMMITMENT IN WHITE COLLAR WOMEN (N=86)

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to use independent judgment ($p = .0910$), resulted in significant correlations with organizational commitment. However, these correlations were considerably lower than those for the blue collar women, partly because of the fact that two of the core dimensions, autonomy and friendship opportunities, were of greater importance than the satisfaction variables.

The two significant correlations between job stress variables and commitment which were hypothesized in Proposition 17 produced mixed results. As in the case of the blue collar women, workload had a small but positive effect on organizational attachment. However, in contrast to the blue collar employees for the female clerical sample, role conflict made a significant negative contribution. The emergence of role conflict as a significant predictor may be accounted for by the fact that office relationships are somewhat more complex than the more unilateral supervisor-blue collar worker relation. In the typical contemporary office, workers are organized into functional units (i.e. accounting, inventory control, etc.) and within units clerks are further subdivided according to the tasks they perform. In fact, one of the most striking features of "paper work" in large organizations is the elaborate subdivision of tasks and the extreme specialization of the worker (Hilaeel, 1975).

Finally, the results with respect to mental health as a predictor of organizational commitment were consistent and

in the predicted direction. The general mental health factor which signals psychological adjustment showed a positive relationship with commitment, whereas women with a higher incidence of depressive and somatic symptoms reported less commitment.

Table 13 summarizes the predicted relationships among the remaining constructs for white collar women. The hypothesized correlation between motivation to work and job satisfaction was supported for two of the facets (satisfaction with supervision, $p = .1273$) and satisfaction with the use of independent judgment ($p = .0764$). The observed relationships between decentralization and the core job dimensions indicated that the greater the opportunities for participation, the greater the number of positively experienced job characteristics. In other words, women in this subsample reported that participation in decision-making had a strong impact on the amount of feedback they received ($p = .4005$), the extent to which they believed their work made a significant contribution to the organization as a whole ($p = .5233$), the degree of autonomy provided by the job ($p = .4714$) and the social aspects of the job ($p = .2786$).

Insert Table 13 about here

Table 13
 Determinants of Organizational Commitment in
 White Collar Women
 (N = 86)

H_0	Predicted in Bivariate Relationship	Direction	Obtained Path Coefficient	Supported?
H_1	X_1X_9	+	.1125	YES
H_2	X_1X_8	+	+/-	?
H_3	X_1X_7	+	.1314-.1334	YES
H_4	X_2X_9	+	+/-	?
H_5	X_2X_8	+	+/-	?
H_6	X_3X_9	+	NS	NO
H_7	X_3X_8	+	+/-	?
H_8	X_3X_7	+	.0764-.1217	YES
H_9	X_3X_6	-	OD	
H_{10}	X_3X_5	+	.2432-.5233	YES
H_{11}	X_4X_9	+	.0773	YES
H_{12}	X_4X_6	+	.1469-.2408	YES
H_{13}	X_5X_9	+	+/-	?
H_{14}	X_5X_8	+	+/-	?
H_{15}	X_5X_7	+	+/-	?
H_{16}	X_5X_6	-	-.1218	YES

Table 13 (continued)

H_0	Predicted in Bivariate Relationship	Direction	Obtained Path Coefficient	Supported?
H_{17}	X_6X_9	-	+/-	?
H_{18}	X_6X_8	-	+/-	?
H_{19}	X_7X_9	+	.0910-.1338	YES
H_{20}	X_7X_8	+	+/-	?
H_{21}	X_8X_9	+	.1031- -.2671	YES

The relationships among the mental health variables and the remaining constructs were either nonsignificant or ambiguous. As in the case of the blue collar women, there is no parallel in the literature discussing pink collar workers or the less managerial, more skilled white collar employees such as those engaged in secretarial work. Both empirical research and theoretical treatments have failed to include the white collar sphere of work despite the fact that they are occupied by large numbers of women workers. According to the Manpower Report of the President, 11.7 million female clerical workers were attached to the labor force in 1975.

Recent discussions of white collar work (e.g. Work in America, 1973) imply that white collar work, particularly clerical work, is becoming degraded, deskilled, and factory-like. A federal task force reported:

secretaries, clerks. . . were once grateful for having been spared the dehumanization of the factory. . . they had higher status than blue collar workers. But today the clerk . . . is the typical American worker. . . and such positions offer little in the way of prestige. . . imparting to the clerical worker the same impersonality that blue collar workers experience (p. 38).

Although many routine clerical jobs such as tabulating have been eliminated with the introduction of electronic data processing, other routine jobs such as transporting disks have been created. While the programming technology calls for the design of new, skilled jobs, clerks are rarely upgraded to fill these positions. Instead, professional and technical workers, recruited from outside the organization, are chosen who form a new, higher status group within the office hierarchy (Hall, 1975). Consequently, the proportion of low-level clerical jobs remains the same.

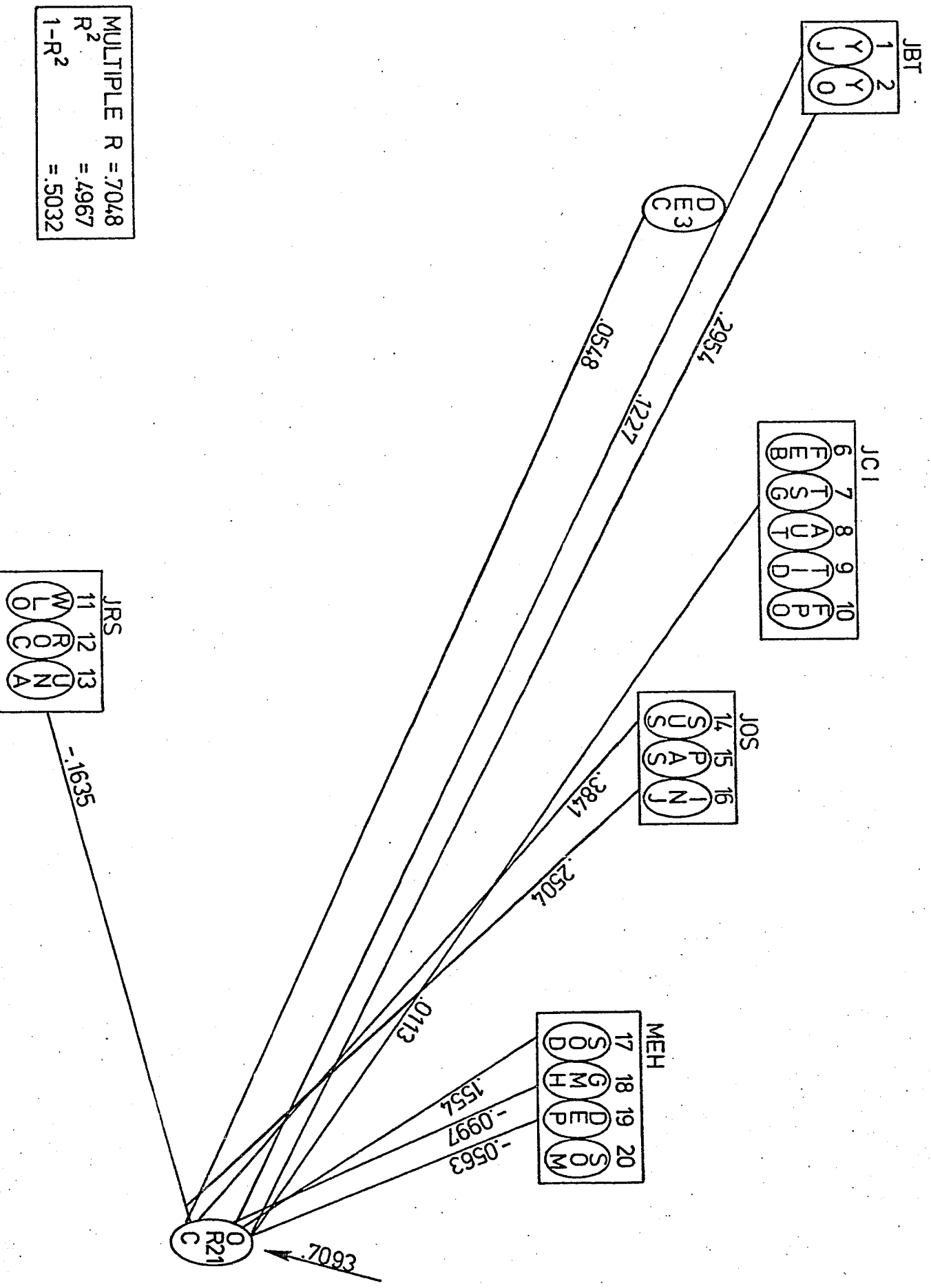
Organizational Commitment in Professional Women.

As Figure 6 indicates, organizational commitment of professional women was primarily determined by four multifactorial constructs: tenure, job satisfaction, job stress and mental health. In the ensuing discussion, each of these factors will be addressed.

Insert Figure 6 about here

Both tenure variables had a strong impact on the commitment of the faculty women in this sample. The path linking organizational tenure and commitment ($p = .2954$) reflects the reality of the importance of the academic tenure system. Tenured faculty were more committed to the organization than faculty members still awaiting the end of the traditional six-year probationary period. Since

FIGURE 6
DETERMINANTS OF ORGANIZATIONAL COMMITMENT IN PROFESSIONAL WOMEN (N=70)



achieving tenure and promotion takes time, it follows that faculty women with greater organizational longevity are also more committed. Becker's (1960) concept of side bets was certainly supported for this sample, if one considers tenure as a major investment into an organization.

In contrast to both blue collar and white collar women, the motivational variable had no effect on commitment of faculty women. This may indicate that women in presumably more prestigious positions may already have high self-esteem and are able to utilize their unique abilities in a multitude of ways and are less dependent upon their positions to fill their higher order needs.

The two structural variables, decentralization and formalization, had either no impact, or in the case of decentralization a barely significant effect on the commitment of professional women ($p = .0548$). It is suggested here that these structural variables are less important because faculty members typically define their position in the organizational hierarchy in terms of their standing in their respective department rather than in terms of the university as a whole. Other possible interpretations of the lack of impact of organizational/structural variables on women's commitment are offered in the final chapter.

As in the case of the two previous samples, job satisfaction made a major contribution to the commitment of professional women. However, some interesting variations in

the three satisfaction factors are worth noting. First, satisfaction with supervision was the most important facet for the faculty women ($p = .3841$). Although most faculty members probably do not consider the chairperson as a supervisor in the same way blue collar and white collar employees view their immediate supervisor, for most faculty satisfaction with the leadership demonstrated by the chairperson is an important source of overall job satisfaction. The second factor, ability to exercise independent judgment ($p = .2504$) manifests itself in many activities that characterize teaching on a college faculty: experimentation with different classroom techniques, participation in faculty development programs, and, of course, productivity in the three areas which define standards of performance for most teaching faculty: teaching, research, and community services. Moreover, faculty satisfied in these areas are more likely to be instrumental in contributing to the attainment of departmental goals. Even though academic freedom is highly prized in institutions of higher learning, it is not individuals working in isolation who establish goals and measures of productivity (Uehling, 1980). Rather, it is a team of individuals organized around focal areas of interest within the domain of their specialization who share common intellectual goals. Thus, it may be argued that faculty satisfied with the chairperson's leadership and supervision who are also free to exercise independent judgment in a

variety of contexts are likely to be committed to the employing institution. In this case, commitment may either be a direct outcome of job satisfaction as defined here or it may be mediated by each faculty member's individual contribution to the accomplishment of departmental goals in key areas of academic activities. In contrast to the women in the white collar and blue collar categories, pay satisfaction had no influence on the commitment of professional women. This finding is interesting in view of the fact that faculty women see differential salary (the mean earning for male faculty was \$26,172; for female \$21,337 according to the Chronicle of Higher Education (June, 1982) as a major source of inequity. Other inequities seen include the treatment on tenure and promotion decisions and the chance to participate on important committees and in decision-making. Given these facts, one would expect a significant positive correlation between pay satisfaction and commitment such that the lower the satisfaction with pay and promotional opportunities, the lower the organizational commitment.

Of the three factors that define job related stress, only underutilization of prior skills and expertise was significantly correlated with commitment ($p = -.1635$). Women who felt that their talents were underutilized were also those who were less committed.

For this sample, as in the previous two cases, the core job dimensions did not influence commitment in accordance

with the predictions. Four factors, feedback, social aspects, autonomy and task identity did not have any net effect. The fifth factor, task significance, had a small effect indicating that faculty women who believed that their work added significantly to the mission of the department or the university, were more committed. The implications of the role of the job characteristics model will be discussed in the final chapter.

Overall, the results with respect to mental health as a predictor were again somewhat mixed. Although the social desirability subscale was positively related with commitment ($p = .1554$), the presence of depressive tendencies correlated negatively indicating that the fewer the depressive symptoms, the lower the employee's commitment. The remaining factor, somatic complaints which also attained significance was also negatively correlated and in the predicted direction.

Among the remaining relationships which are presented in Table 14, the results with respect to the job characteristic model are unclear because the various JCI factors produced both negative and positive relationships with the remaining construct variables. An interesting strong positive relationship between decentralization and mental health was noted, supporting the basic prediction between these two variables for this sample.

Insert Table 14 about here

Taken together, four factors, tenure, job satisfaction, job stress defined as the lack of opportunity to utilize one's expertise and mental health were the strongest predictors of organizational commitment for this sample. The absence of a significant influence of three of the major constructs in the proposed model, decentralization (although barely significant), formalization and motivation are discussed in Chapter 5.

Looking across the blue, white collar and professional female samples, a number of interesting similarities and differences become apparent. Across the three samples, job satisfaction as a global variable undoubtedly had the most consistent and stable influence on commitment. However, if we examine the facets of job satisfaction more closely, important differences emerge. The blue collar and the professional groups of women both indicated that satisfaction with supervision by and large determined their identification with organizational goals. Blue collar and white collar women, on the other hand, both indicated that pay satisfaction was important for them to become and remain loyal to their employing organization. Finally, the only facet of job satisfaction shared by all three occupational groups was the ability to use independent judgment on the

Table 14
 Determinants of Organizational Commitment in
 Professional Women
 (N = 70)

H_0	Predicted in Bivariate Relationship	Direction	Obtained Path Coefficient	Supported?
H_1	X_1X_9	+	.1227	YES
H_2	X_1X_8	+	+/-	?
H_3	X_1X_7	+	+/-	?
H_4	X_2X_9	+	.1227-.2954	YES
H_5	X_2X_8	+	+/-	?
H_6	X_3X_9	+	.0548	YES
H_7	X_3X_8	+	.0847-.2506	YES
H_8	X_3X_7	+	.0686-.1947	YES
H_9	X_3X_6	-	OD	NO
H_{10}	X_3X_5	+	+/-	?
H_{11}	X_4X_9	+	NS	NO
H_{12}	X_4X_6	+	.0809-.3094	YES
H_{13}	X_5X_9	+	.0713	YES
H_{14}	X_5X_8	+	+/-	?
H_{15}	X_5X_7	+	+/-	?
H_{16}	X_5X_6	-	+/-	?

Table 14 (continued)

H_0	Predicted in Bivariate Relationship	Direction	Obtained Path Coefficient	Supported?
H_{17}	X_6X_9	-	-.1635	YES
H_{18}	X_6X_8	-	-.1020- -.1419	YES
H_{19}	X_7X_9	+	.1554-.3841	YES
H_{20}	X_7X_8	+	+/-	?
H_{21}	X_8X_9	+	.0563-.1554	YES

job. The impact on commitment of this factor was most important for professional women, slightly less important for blue collar women and considerably less important for white collar women.

The second factor shared by all female groups was job stress, although there were variations among the stress factors that influenced commitment. Work load was positively related to commitment for all three samples with path coefficients of comparable magnitude. In the absence of underutilization of their skills, both blue collar and professional reported greater commitment; however, stress stemming from lack of utilization of abilities did not impact upon the commitment of white collar women. Finally, the third stress factor, role conflict, was only significant for white collar women. It suggested that role conflict may be more likely to occur in the white collar group because of the greater specialization of roles that make up a clerical hierarchy.

Although important among the three groups of women, the mental health factor showed the greatest amount of variation since there was not a single factor which showed a correlation in the same direction with commitment.

On the remaining variables the samples were split. Job tenure was significant for white and professional women, but unimportant for the blue collar women; both blue collar and white collar women reported that satisfaction of their need to work contributed to their commitment. However, this factor was nonsignificant for professional women.

Among the two structural variables, decentralization essentially had no effect on any group. One possible explanation is that the blue collar women in this sample were so far removed from decision-making agents in the organization that they never had any opportunity to participate; the same interpretation may also apply to the white collar women. Faculty women, on the other hand, may participate a great deal in decision-making processes at the departmental level but typically have little impact on university-wide decisions unless they are members of university committees.

The results regarding the impact of the core job dimensions were perplexing. While characteristics of the task had no relationship to professional women's commitment, feedback showed a negative correlation with commitment among blue collar women. For the white collar group, four job dimensions were significant but two had negative correlations with commitment. Further discussion of the implications of these unsupported relationships with respect to structural variables and the core dimensions follows in Chapter 5.

Organizational Commitment in Professional Men (N = 84).

The major reason for including the two male samples was to provide comparison groups for the test of the hypotheses. Consequently, the presentation and discussion of the results of the path analyses for the two male samples will focus on the similarities and differences in commitment between the

male and female professional groups and the two white collar samples with male and female representation.

The results of the test of the full model on the male professional group is presented in Figure 6. In contrast to the three female samples, all of the global constructs had significant impact on the commitment of this group of male professionals, thus supporting the theory of commitment proposed here. This finding was predictable since the theory was derived from previous research which, by and large, relied on male samples. In other words, across the three female samples, certain construct variables failed to attain significance. In the case of the blue collar women, these were both tenure variables, decentralization and with the exception of feedback, all JCI factors; for the white collar women, decentralization, autonomy from the JCI and the satisfaction with supervision factor from the MSQ, and for the professional women, formalization, two JCI factors (FEB and FPO), and the pay satisfaction factor. For the professional men, on the other hand, all of the hypothesized constructs correlated significantly with commitment although some of these correlations were in the opposite direction from the predictions.

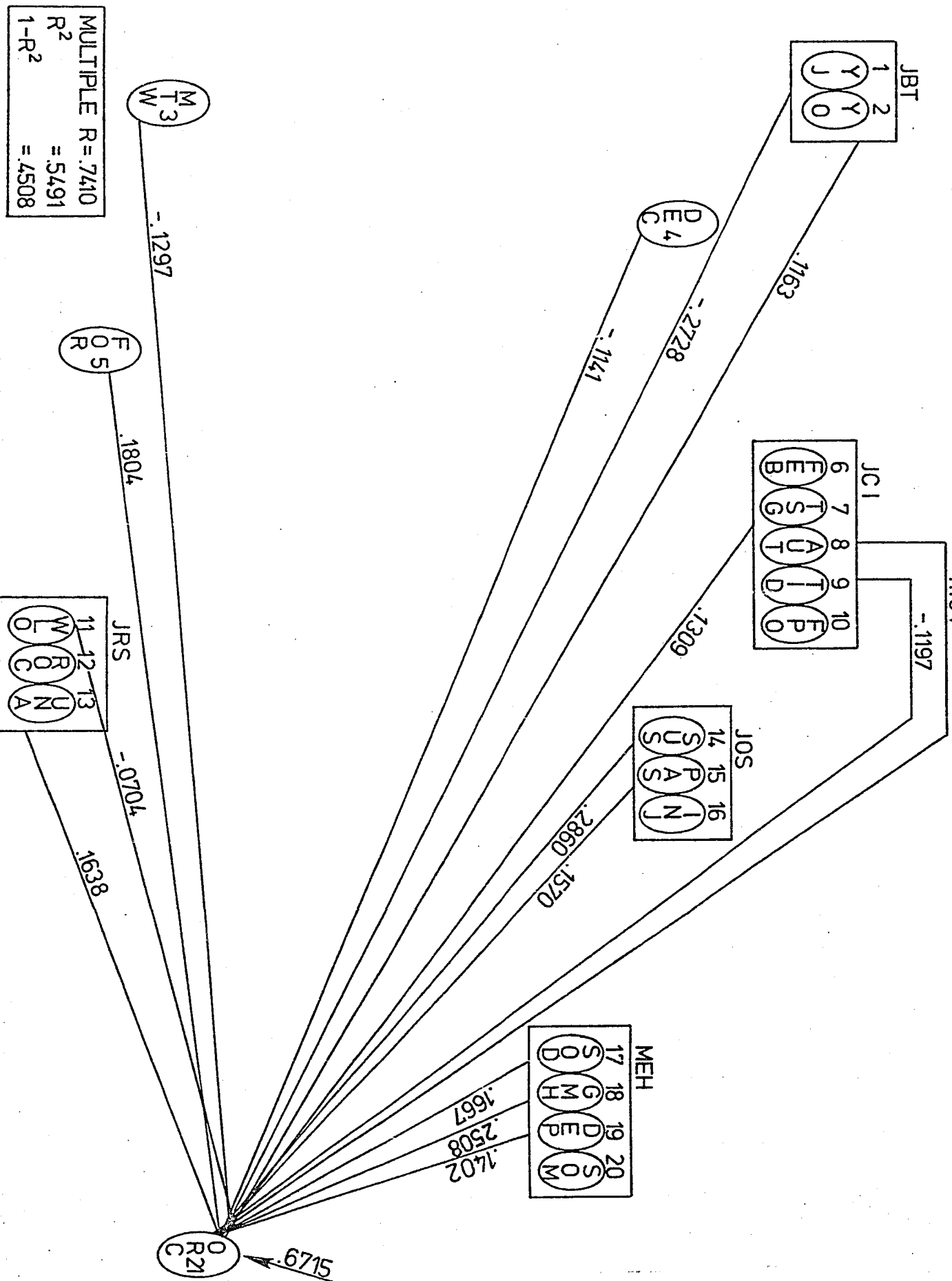
Insert Figure 7 about here

As was the case with the three female samples, job satisfaction measured by satisfaction with supervision ($p =$

FIGURE 7

DETERMINANTS OF ORGANIZATIONAL COMMITMENT IN PROFESSIONAL MEN (N=84)

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.2860) and pay satisfaction ($p = .1570$) combined played the major role in determining commitment. Somewhat surprisingly for this group, however, satisfaction with independent judgment was found to have no effect. Although both the male engineers from NARF and the female faculty members from ODU were labeled professionals, there were important differences between the two groups both in terms of the employing organization (government service vs. state university) and the nature of the jobs occupied by the men and women in these two samples. As discussed in the last chapter, engineering work is often associated with high degrees of formalization which may preclude the use of independent judgment whereas faculty positions are more loosely structured.

Both tenure variables produced significant effects such that organizational tenure correlated negatively with commitment ($p = -.2788$) while job tenure correlated positively ($p = .1162$). The negative relationship between organizational tenure and commitment may be a function of this particular occupational group. The majority of respondents in this sample were engineers specialized in various areas such as aerospace, industrial and environmental engineering employed in a government setting. It seems plausible that these men were less willing to remain with the organization, using intent to stay as an index of commitment, because the government does not afford engineers with long term experience the same financial rewards that private industry does.

With respect to the motivational construct, the findings, which showed a negative correlation between work motivation and commitment ($p = -.1297$) were unexpected and perplexing because they imply that engineers whose higher order needs are less satisfied, are more committed. This finding suggests that engineers identify with their profession rather than with the employing organization.

In contrast to the professional women for whom organizational/structural variables essentially had no effect, both decentralization and formalization correlated significantly with the commitment of professional men. For the decentralization variable, however, the effect was in the opposite direction suggesting that the fewer the opportunities for participation, the greater the commitment. It appears that the relationship between participatory decision-making and organizational commitment for this group was mediated by other, unobserved variables. For example, it seems plausible to suggest that engineers do not like to participate because the nature of their work is highly individualized and they work very independently. The results here imply that engineers like structure but do not like participation.

Formalization, on the other hand, had the predicted positive effect ($p = .1805$). In fact, comparing the magnitude of the influence of formalization on commitment, it was the largest for this sample of professional men.

Among the core dimensions of the job, task significance ($p = .1309$) and autonomy ($p = .1184$) had positive effects while task identity ($p = -.1197$) correlated negatively with commitment. The remaining two factors, feedback and social interactions on the job were nonsignificant.

Finally, mental health again produced significant but puzzling relationships with commitment. Two of the factors, social desirability and general mental health were positively correlated with commitment as predicted but so was the presence of depressive tendencies which is opposite to the predictions.

The interrelationships among the remaining construct variables are summarized in Table 16. Again, worthwhile noting is the positive relationship between decentralization and mental health which had also been noted for the female sample.

Insert Table 15 about here

Organizational Commitment in White Collar Men ($N = 186$). The final sample of 186 white collar men occupying ranks from GS 7 to 9 was selected as a reference group for a two-way comparison with white collar females (GS 3 to 5) and professional males drawn from the same organization. The majority of the men in this subgroup were employed in technical jobs such as quality assurance specialists or as entry level supervisors.

Table 15
Determinants of Organizational Commitment in
Professional Men
(N = 84)

H ₀	Predicted in Bivariate Relationship	Direction	Obtained Path Coefficient	Supported?
H ₁	X ₁ X ₉	+	OD	NO
H ₂	X ₁ X ₈	+	+/-	?
H ₃	X ₁ X ₇	+	OD	NO
H ₄	X ₂ X ₉	+	+/-	?
H ₅	X ₂ X ₈	+	+/-	?
H ₆	X ₃ X ₉	+	OD	NO
H ₇	X ₃ X ₈	+	.0504-.1124	YES
H ₈	X ₃ X ₇	+	OD	NO
H ₉	X ₃ X ₆	-	OD	NO
H ₁₀	X ₃ X ₅	+	.0235-.1757	YES
H ₁₁	X ₄ X ₉	+	.1804	YES
H ₁₂	X ₄ X ₆	+	OD	NO
H ₁₃	X ₅ X ₉	+	+/-	?
H ₁₄	X ₅ X ₈	+	+/-	?
H ₁₅	X ₅ X ₇	-	+/-	?
H ₁₆	X ₅ X ₆	-	+/-	?

Table 15 (continued)

H_0	Predicted in Bivariate Relationship	Direction	Obtained Path Coefficient	Supported?
H_{17}	X_6X_9	-	$-.0740$ -.1638	YES
H_{18}	X_6X_8	+	+/-	?
H_{19}	X_7X_9	+	$.1570$ -.2860	YES
H_{20}	X_7X_8	+	+/-	?
H_{21}	X_8X_9	+	+/-	?

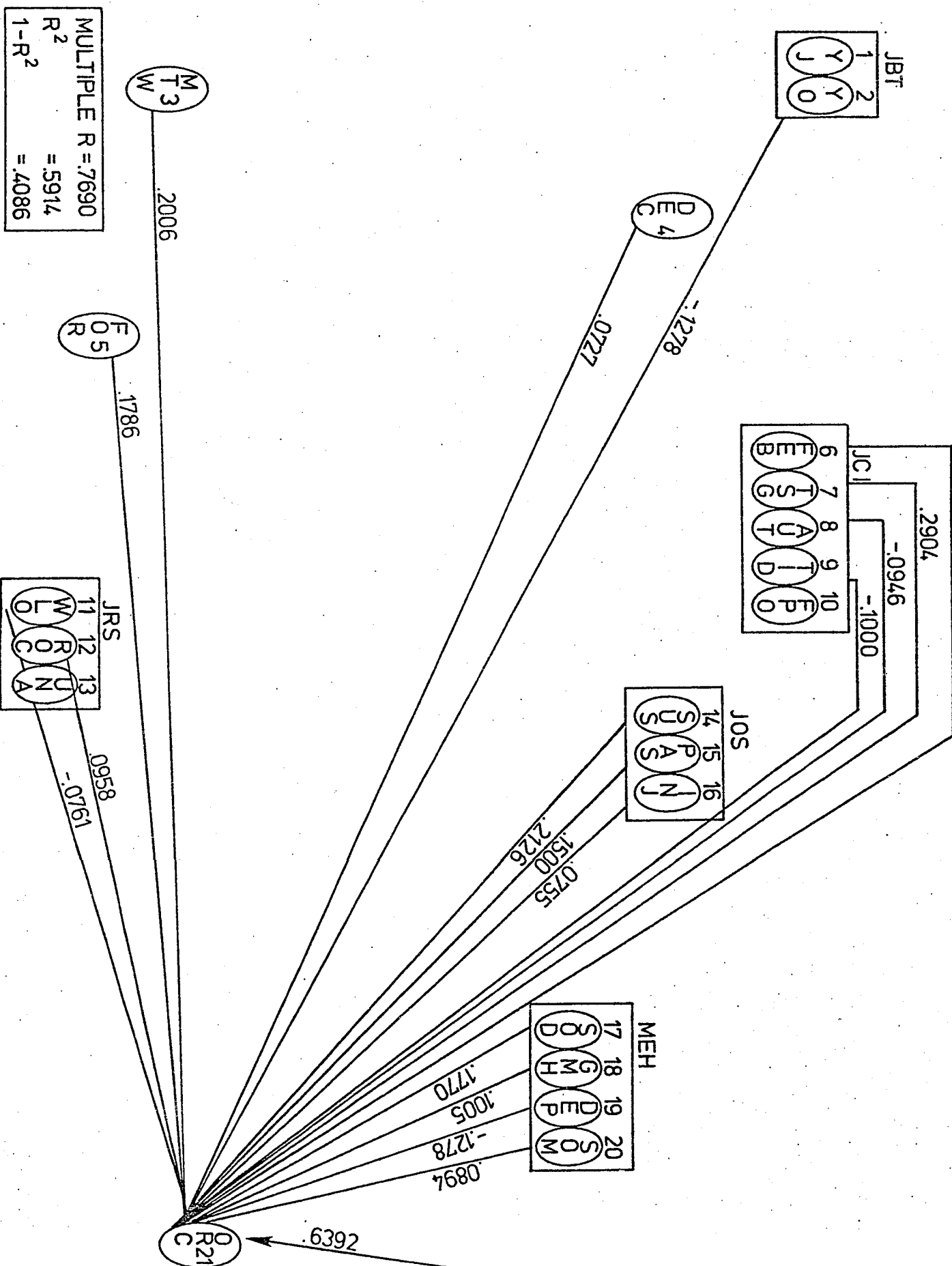
Overall, the model received the best support when tested on this white collar male sample, partly because of the fact that this was the largest of the five samples and partly because the men in this occupational group most closely resemble the "average worker."

Figure 8 indicates that job satisfaction was also a major determinant of commitment for this occupational group with significant paths linking satisfaction with supervision ($p = .2126$), satisfaction with pay and promotion ($p = .1500$) and satisfaction with the use of independent judgment ($p = .07500$) to organizational commitment. The second major influence on commitment stemmed from motivation, in sharp contrast to the male professional group. White collar men with high levels of need satisfaction were the most committed to organizational goals and values. Comparing the impact of the motivational variable between white collar and professional men raises the question why one group of men is committed because of need satisfaction while the other is committed because of need deficiencies when both groups are employed by the same organization. One explanation is the dual allegiance which professional but not white collar employees owe to both the organization and the profession.

Insert Figure 8 about here

Among the tenure variables, only organizational tenure had an appreciable effect on commitment, but the effect

FIGURE 8
DETERMINANTS OF ORGANIZATIONAL COMMITMENT IN WHITE COLLAR MEN (N=180)



indicated that the shorter the length of service in the organization, the greater the commitment. This finding was contrary to the predictions.

This sample of white collar men was the only occupational group for whom both decentralization ($p = .0727$) and formalization ($p = .1786$) showed positive effects on commitment that were in the predicted direction. Similarly, with respect to job stress, this was the only subsample for which overload had the hypothesized negative effect ($p = -.0761$). Role conflict, on the other hand, was positively, rather than negatively correlated with commitment ($p = .0958$). The nature of the jobs held by the professional and white collar men was vastly different and accounts, at least in part, for the differences observed between these two groups.

Three predictions bearing upon the relationship between mental health and organizational commitment were supported for this group. Social desirability and general mental health showed positive correlation ($p = .1770$ and $p = .1005$, respectively) while tendencies toward depression had a negative effect ($p = -.1278$). The final factor, presence of somatic complaints correlated positively with commitment.

Insert Table 16 about here

Table 16, which summarizes the interrelationships among the antecedents of commitment, shows a positive relationship

Table 16
 Determinants of Organizational Commitment in
 White Collar Men
 (N = 186)

H_0	Predicted in Bivariate Relationship	Direction	Obtained Path Coefficient	Supported?
H_1	X_1X_9	+	.2006	YES
H_2	X_1X_8	+	.1923- -.0914	YES
H_3	X_1X_7	+	.0719	YES
H_4	X_2X_9	+	OD	NO
H_5	X_2X_8	+	+/-	?
H_6	X_3X_9	+	.0727	YES
H_7	X_3X_8	+	NS	NO
H_8	X_3X_7	+	.0574-.1297	YES
H_9	X_3X_6	-	OD	?
H_{10}	X_3X_5	+	.0512-.3062	YES
H_{11}	X_4X_9	+	.1786	YES
H_{12}	X_4X_6	+	NS	NO
H_{13}	X_5X_9	+	+/-	?
H_{14}	X_5X_8	+	+/-	?
H_{15}	X_5X_7	-	+/-	?
H_{16}	X_5X_6	-	+/-	?

Table 16 (continued)

H_0	Predicted in Bivariate Relationship	Direction	Obtained Path Coefficient	Supported?
H_{17}	X_6X_9	-	+/-	?
H_{18}	X_6X_8	+	+/-	?
H_{19}	X_7X_9	+	.0955-.2126	YES
H_{20}	X_7X_8	+	+/-	?
H_{21}	X_8X_9	+	+/-	?

between motivation and job satisfaction ($p = .0719$), motivation and mental health ($p = .1923$), decentralization and job satisfaction ($p = .1297$) and decentralization and some of the job characteristics ($p = .0512$ to $.3062$). The remaining relationships are difficult to interpret; most of this ambiguity regarding the interrelation can be attributed to the JCI and GHQ which produced counterintuitive correlations.

Comparing professional and white collar men working for the same organization indicated that two job satisfaction factors (satisfaction with supervision and satisfaction with pay) had a major impact on organizational commitment in both groups. The path coefficients for these two factors were comparable in magnitude for professional and white collar men and in both cases satisfaction with pay. Similarly, formalization had an effect of similar magnitude in both male groups. The second structural variable, decentralization, while significant for both groups had positive influence on the commitment of white collar men but negative impact upon professional men. These findings suggest that the effects of decentralization at higher job levels may be negative. One possible explanation of this finding is that among professional men, the decentral-

ization-organizational commitment relationship may be mediated by role conflict in the sense that participation influences commitment negatively because it generates role conflict.

The effects of tenure were split across the two groups. White collar men reported that the number of years they had been on the same job negatively affected their commitment while for the professional men this relationship was reversed. Organizational tenure, on the other hand, had no effect on commitment of white collar employees but a significantly negative effect on the professional group.

For both groups, some JCI factors showed negative relations with commitment while others correlated positively. This situation repeated itself for the mental health variable.

The second relevant comparison to be made examines the similarities and differences in organizational commitment among white collar males and white collar females. Here, some interesting differences were noted. First, job satisfaction was the driving factor determining the commitment of the men in this occupational category, while motivation was the most important factor for women. However, both men and women whose higher order needs were satisfied showed greater commitment than men and women who were satisfied with the salaries they received. Thus, need satisfaction was more important than pay satisfaction in determining commitment. Finally, for both men and women in

white collar jobs satisfaction with the ability to apply independent thought to the task was equally important.

In the two white collar groups, decentralization was important for the commitment of men but played no part in the commitment of women. This difference between men and women can be accounted for by differences in job levels across these two samples since men occupied higher ranks than the clerical women (GS 7 to 9 vs. GS 3 to 5). Thus, any sex differences in the effect of decentralization between white collar men and white collar women are probably confounded by job level. This interpretation received earlier support from Kavanagh and Halpern (1977) who noted that once job level was controlled, differences in job and life satisfaction between men and women disappeared.

An examination of the impact of the JCI core job dimensions on male and female white collar workers resulted in a highly confusing picture. Feedback had positive effect on women's commitment but negative influence on male commitment with the organization. In the case of task significance, the situation was reversed, since male commitment was significantly influenced by task significance. Autonomy, which in all published research correlated positively with employee attitudes and behavior, had no effect on women while for the white collar men, it correlated negatively with organizational commitment. However, most of the published research reported zero-order correlations whereas in this research the hypotheses were

tested with zero-order correlations and partials simultaneously. Unless these statistics are examined simultaneously, their relative importance is difficult to determine. A similar effect was observed for the task identity factor. However, the nonsignificant effect occurred among the men since women's commitment was negatively affected by task identity. The last factor, the social aspects of the job, had a positive influence on women's commitment but correlated negatively with men's. Thus, across all samples, the job characteristic model showed little predictability for any of the occupational groups. The possible reasons for the failure to obtain the predicted relationships between the JCI factors and commitment are discussed in the last chapter.

Overall, the model fit the results for the male white collar sample much better than it did the male professional sample both in terms of the congruence between predicted relationships and observed path as well as in terms of statistical power. As pointed out before, the amount of variance accounted for by the observed significant path coefficients was .59 for this sample.

On the mental health factor, the relationships between organizational commitment and general mental health and depression were in the predicted direction for white collar women and men. However, women with more somatic complaints but men with fewer somatic complaints were the ones who were committed. This sex difference seems to support the

stereotype that somatic complaints are more consistent with the female than the male role.

Mental Health Analyses. The second set of analyses in this series of path analyses examined the role of mental health within the context of the nomological net that precedes it. In other words, this time, the remaining seven antecedents (JBT, MTW, DEC, FOR, JC, JRS, JS) of the original model, which after the factor analyses are now represented by 16 factors, were regressed on the four factors of the GHQ to determine the extent to which individual, organizational, and job characteristics contribute to variations in mental health. Because of the complexity of the mental health variable, and because of the fact that at this point we are still dealing with 16 predictors and four outcome variables, the discussion will focus only on the general health factor (GMH) extracted from the GHQ. There are two primary reasons for singling out this factor. First, among the four GHQ factors, the general mental health factor most closely resembles an overall index of mental adjustment. Although the item content of the first factor, social desirability, is similar in content, this factor, as discussed in conjunction with the factor analyses, measures social desirability as a response set rather than mental health. Second, the two remaining factors, depression and somatic complaints, behaved somewhat inconsistently, partly because of the fact that the item content is dealing with symptoms rather than with

concomitants of mental health. The discussion which follows, then, highlights the major findings with respect to the general mental health factor.

The results for the path analyses for the general mental health factor are presented in Figures 9 through 13. As in the case of mental health as a predictor of organizational commitment, general statements about mental health as an outcome that have validity across all occupational groups are difficult to make. However, some path coefficient patterns within a particular sample as well as some trends across samples are worthwhile noting. For example, for four samples (blue collar, white collar, and professional women and professional men), participation in organizational decisions had a negative relationship with mental health. The three female samples and the male professionals indicated that fewer opportunities for participatory decision-making were more conducive to their mental health than having responsibility for such decisions. The strongest negative correlation between decentralization and mental health was observed among the blue collar women ($p = .2069$), while for white collar men, decentralization did not predict mental health at all.

A second observation concerned the significant correlations between job tenure for all samples except blue collar women. For white collar females ($p = -.3105$), professional women ($p = -.0589$) this relationship indicates that with increasing number of years on the same job, mental health tends to suffer.

The second organizational/structural variable, formalization, showed mixed results. For four samples, significant correlations between formalization and mental health were obtained, however, the directionality of these correlations varied. Formalization showed a positive influence on the mental health of blue collar women ($p = .1221$), white collar men ($p = .2099$), professional men ($p = .0673$) but correlated negatively with mental health for white women ($p = -.1758$). For the female faculty sample, it had no effect at all. The differences across samples imply that employees in different occupational categories perceive the effects of formalization differentially. For some workers, the presence of clearly defined rules and policies may be comforting because it shifts the locus of responsibility to higher authorities. This can have a positive effect on mental health. On the other hand, it is equally conceivable that employees find rigidly enforced organizational policies and procedures frustrating and confining and experience negative health symptoms as a consequence.

The motivational variable had the predicted positive impact only for white collar women ($p = .1223$) and white collar men ($p = .1923$). For blue collar women, professional women and professional men, motivation to work was not related to mental health. Since the two white collar samples were drawn from the same organization, unobserved organization-specific factors may account for the positive relationship with mental health in these two groups.

Among the three facets of job satisfaction, satisfaction with supervision was positively related with mental health for blue collar women ($p = .2770$) and white collar women ($p = .1659$). For white collar and professional women as well as for professional men, satisfaction with supervision had no impact on mental health. Pay satisfaction was positively correlated with mental health in white collar women ($p = .0910$), professional women ($p = .1229$) and professional men ($p = .2499$). The impact of pay/promotion satisfaction on the mental health of the faculty women is interesting in the view of the fact that this job facet did not correlate with organizational commitment of female professionals. For white collar men, pay satisfaction was nonsignificant, while for blue collar women it was negatively correlated with mental health ($p = -.0881$).

Finally, as stated in the introduction, a secondary aim of this research was to explore the impact of the JCI core job dimensions on mental health. For the five occupational groups sampled here, autonomy was positively related to mental health in four samples: white collar women ($p = .1037$), blue collar women ($p = .1747$), male professionals ($p = .0567$) and white collar males ($p = .1797$). For faculty women, the effect of autonomy on mental health was nonsignificant.

Feedback showed positive as well as negative correlations with mental health. For female white collar

employees ($p = -.0662$) and professional males ($p = -.0939$) the effect was negative, implying that the more feedback these employees received, the poorer their mental health was. For the professional women, on the other hand, feedback had a strong positive effect on psychological well being ($p = .2060$). In fact, it was the only JCI factor that correlated significantly with mental health in the faculty sample.

Task significance related positively with mental health only for the two male samples with correlations of $p = .1847$ for professional males and $p = .1423$ for white collar males. No effect of task significance on mental health was observed for any of the female samples.

Of the five JCI factors, task identity produced the most consistent correlation with mental health. Men and women from four samples, white collar women ($p = .1678$), blue collar women ($p = .2315$), professional men ($p = .1288$) and white collar men ($p = .1797$) reported that being able to identify with the work they perform was beneficial for their psychological well being.

Finally, social aspects of work contributed positively to mental health in blue collar women ($p = .2091$), white collar women ($p = .2657$); white collar males, on the other hand, indicated that friendship opportunities on the job were distressing ($p = -.1098$). For the two professional samples, there was no relationship between social interactions on the job and mental health.

Insert Figures 9-13 about here

Taken together, the results regarding the mental health variable strongly reinforce Kavanagh, Hurst and Rose's (1981) recommendation to refrain from using self-report measures in the assessment of mental health because they are subject to serious distortion. Moreover, rather than treating mental health as a predictor, it may be more useful to use it as an outcome variable.

Theory Trimming

Heise (1969) in a much cited article, advocated that by deleting nonsignificant paths in a well identified, recursive system, it is possible to trim a theory down to a more parsimonious version by running the regression over again, retaining only those independent variables found to be statistically and substantively significant. Deleting certain paths from the causal model sets the corresponding path coefficients equal to zero and implies that the correlation between the two variables with the deleted paths can be explained by indirect effects only (Duncan, 1966). If the original correlations among the variables can be closely approximated through a "regeneration" process using only the relationships in the more parsimonious model (i.e.

FIGURE 9

DETERMINANTS OF GENERAL MENTAL HEALTH IN BLUE COLLAR WOMEN (N=145)

170

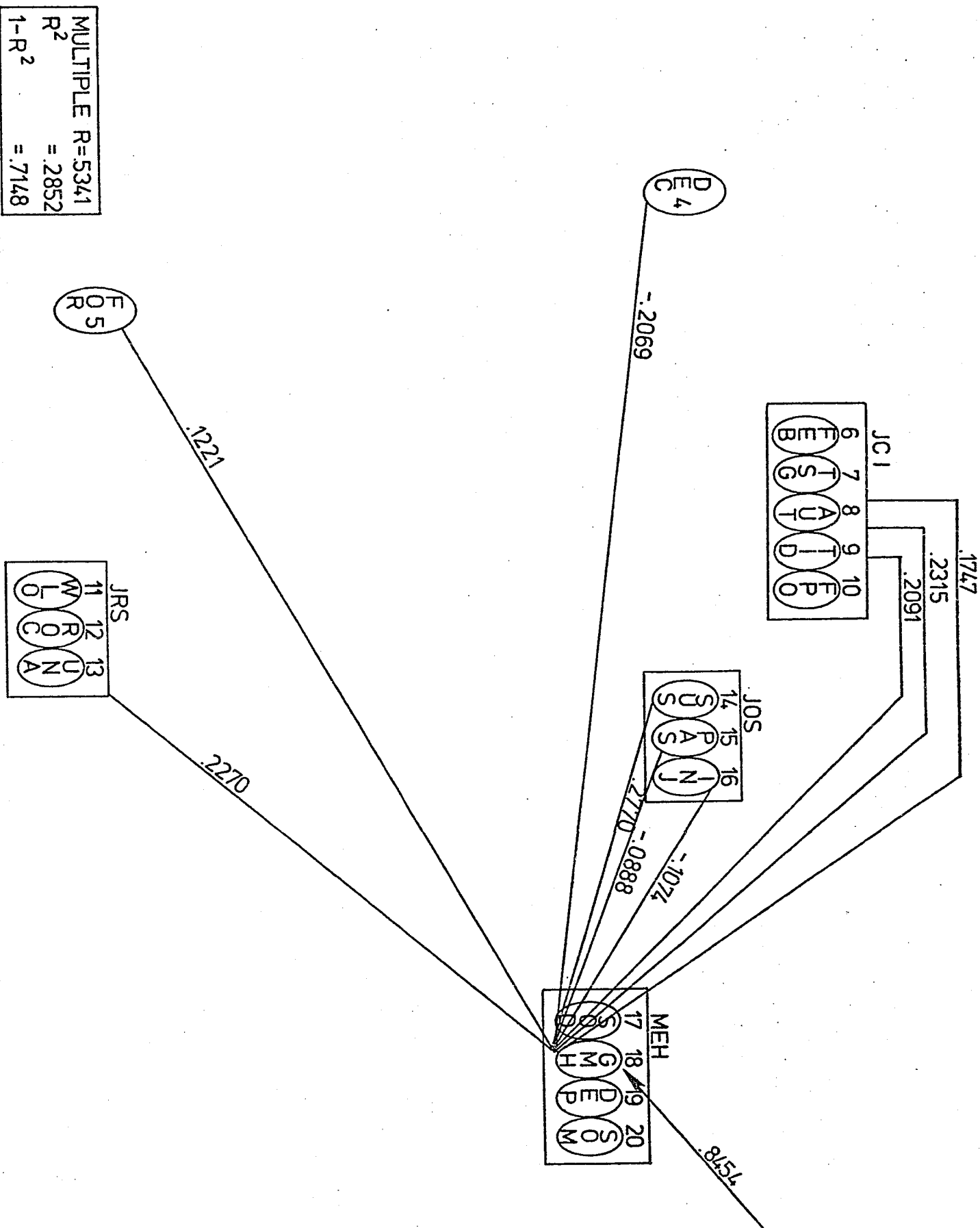


FIGURE 10
DETERMINANTS OF GENERAL MENTAL HEALTH IN WHITE COLLAR WOMEN (N=86)

171

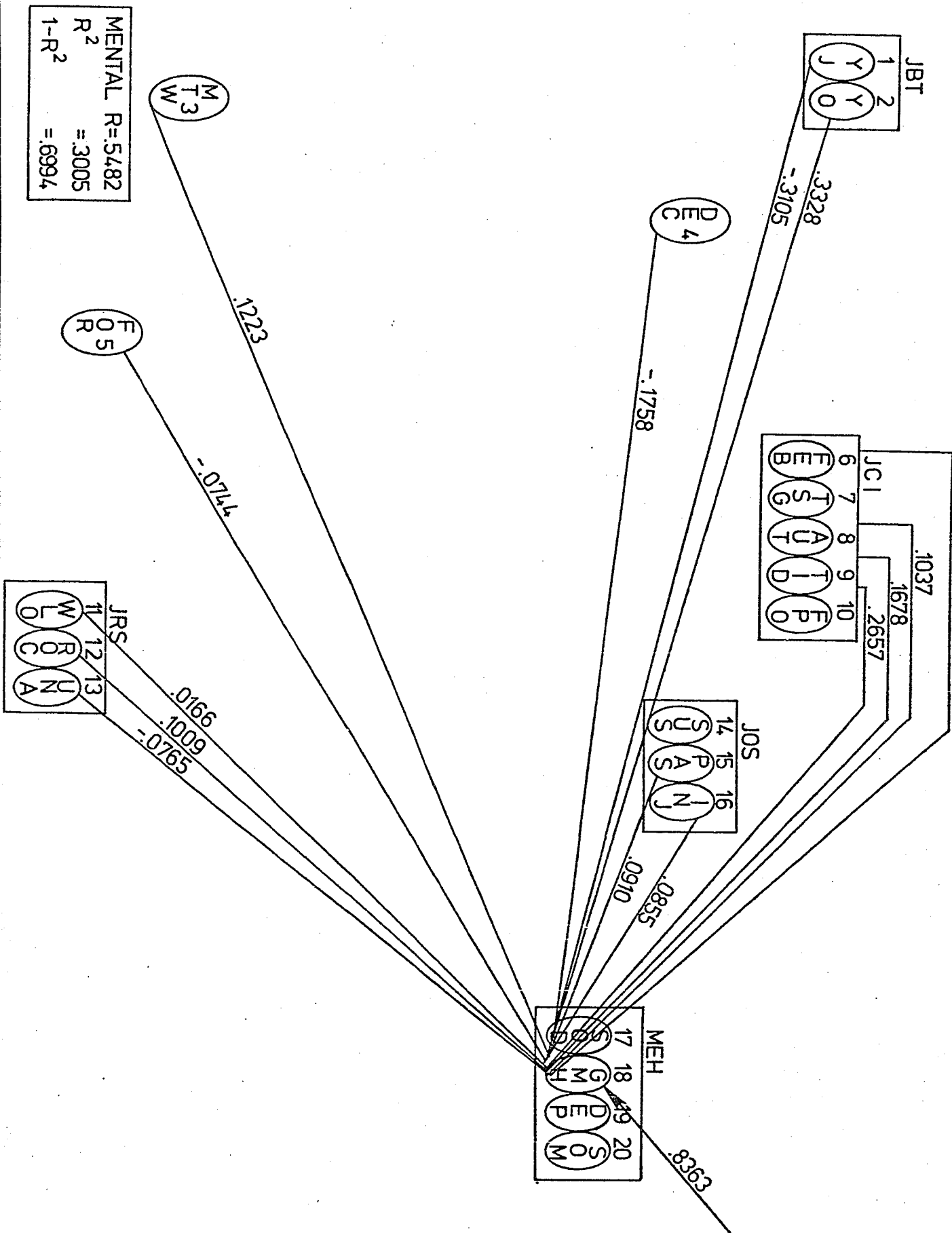


FIGURE 11
DETERMINANTS OF GENERAL MENTAL HEALTH IN PROFESSIONAL WOMEN (N=70)

172

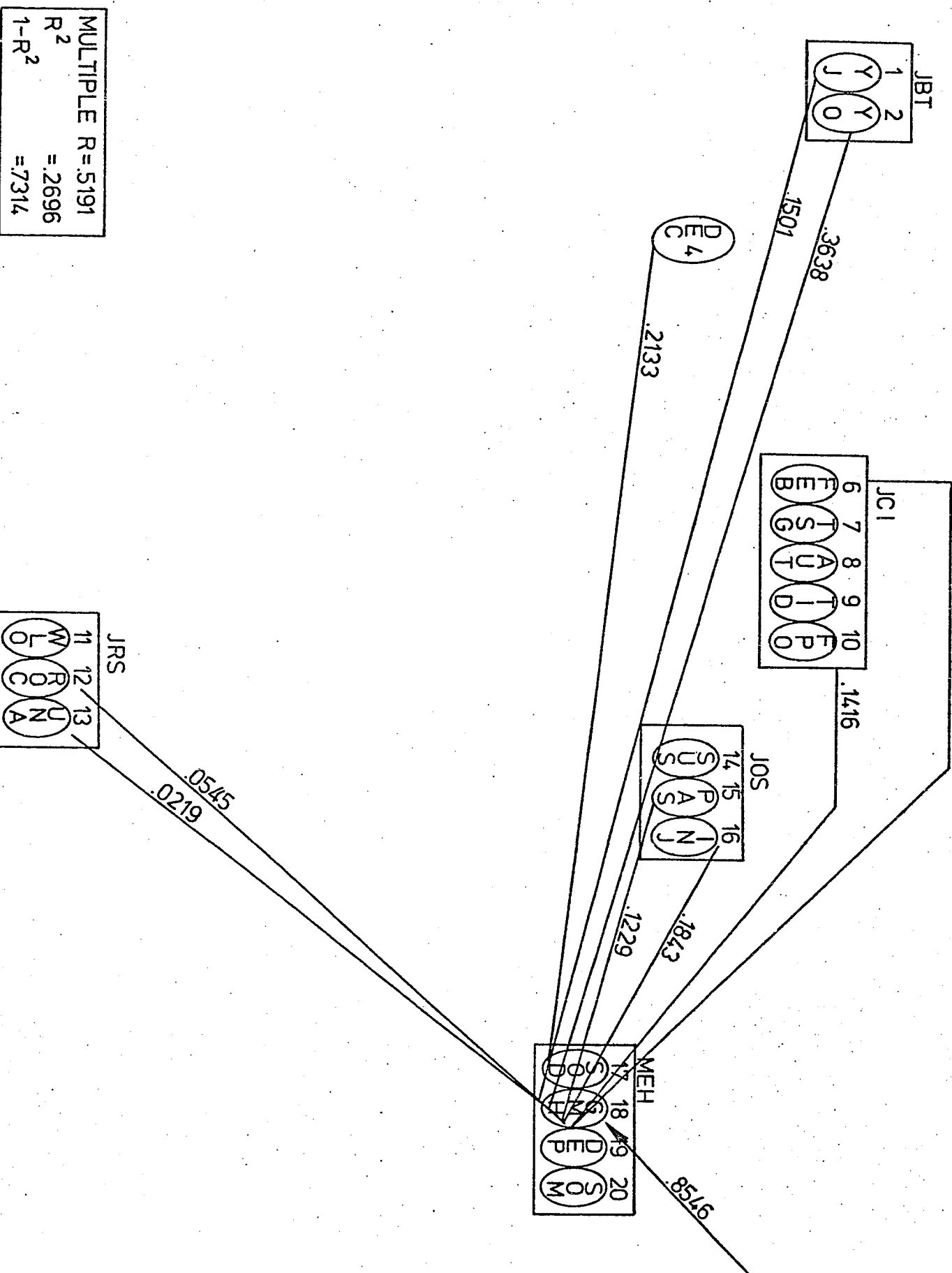


FIGURE 12
DETERMINANTS OF GENERAL MENTAL HEALTH IN PROFESSIONAL MEN (N=84)

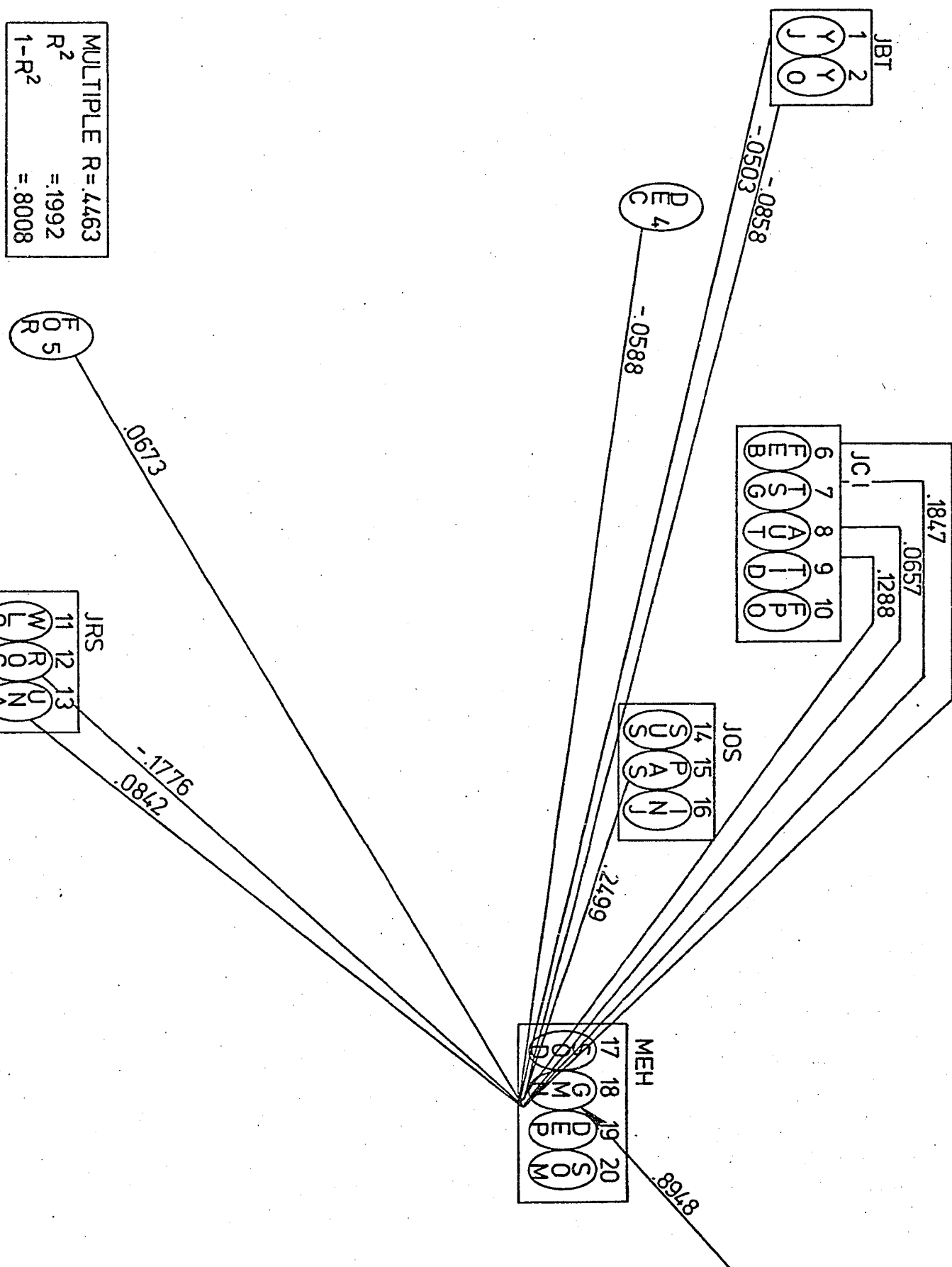
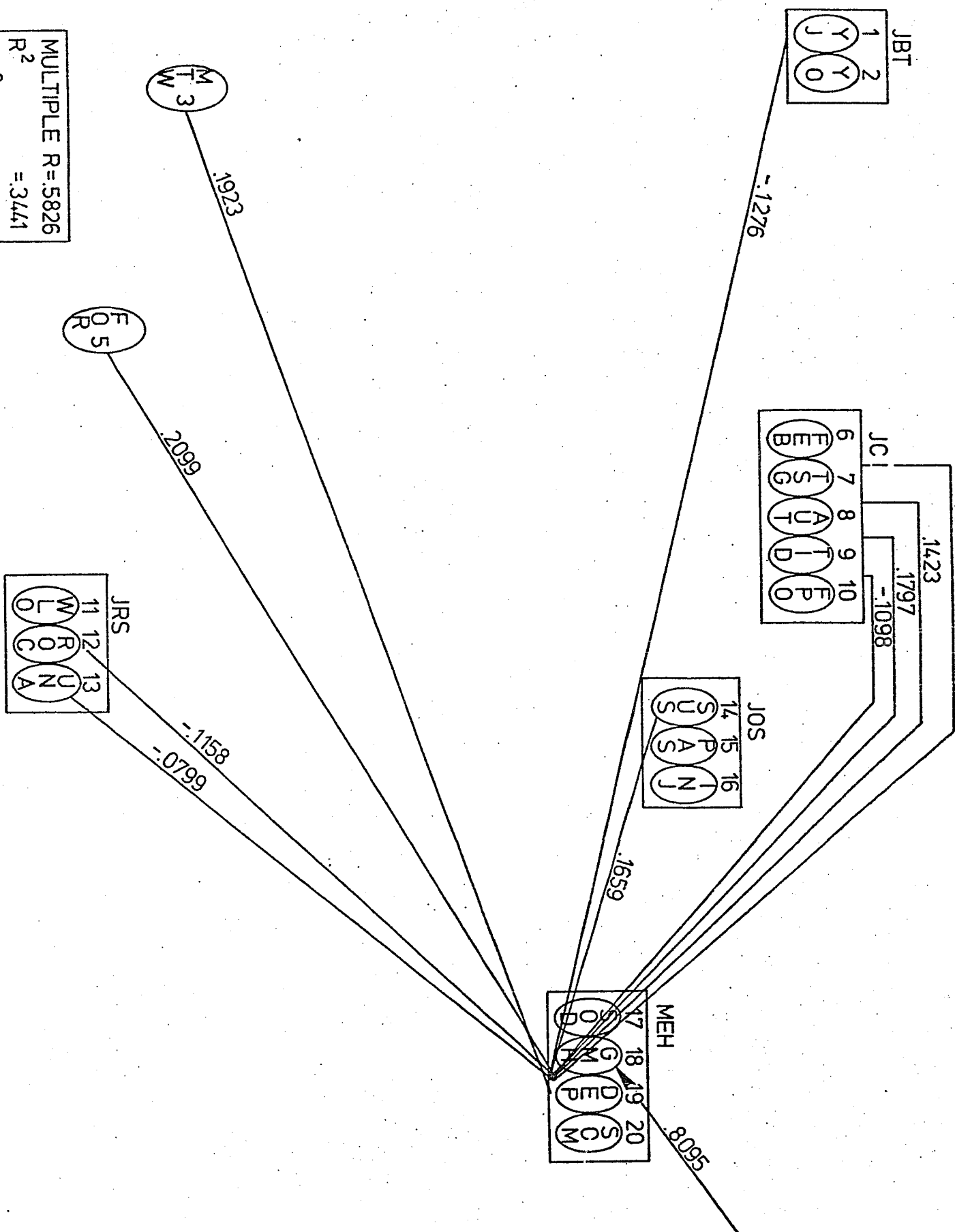


FIGURE 13
DETERMINANTS OF GENERAL MENTAL HEALTH IN WHITE COLLAR MEN (N=186)



MULTIPLE R = .5826
R² = .3441
1-R² = .6573

some paths deleted), it can be concluded that the actual correlations in the data are consistent with the more parsimonious model (Kerlinger & Pedhazur, 1973).

Two successive iterations of path analysis, run for the purpose of identifying the most parsimonious model of organizational commitment, resulted in the final models for the female samples presented below. For the blue collar women, a 13 predictor model was the most parsimonious. Comparing Figure 4 and 9, it was noted that after the deletion of the two tenure variables and motivation, the overall pattern of significant paths remained the same, although the magnitude of the beta weights for the remaining significant paths as well as the disturbance term change.

Insert Figure 14 about here

Trimming the model for white collar women produced the model depicted in Figure 10. Of the 15 predictors which went into the equation, 14 remained significant while one of the mental health factors, somatic complaints, failed to obtain significance.

Insert Figure 15 about here

FIGURE 14

TRIMMED PATH DIAGRAM FOR BLUE COLLAR WOMEN CRITERION: ORGANIZATIONAL COMMITMENT

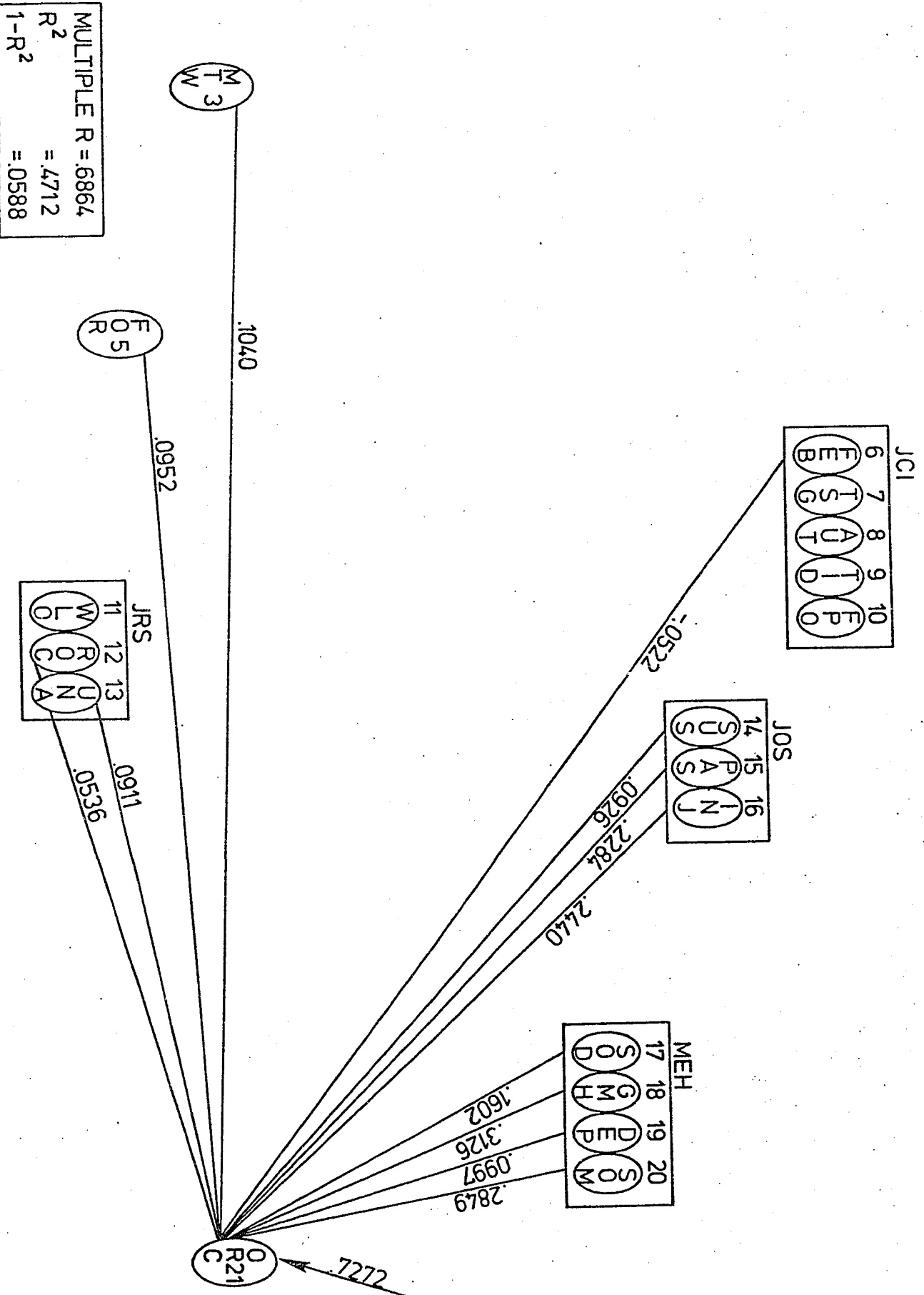
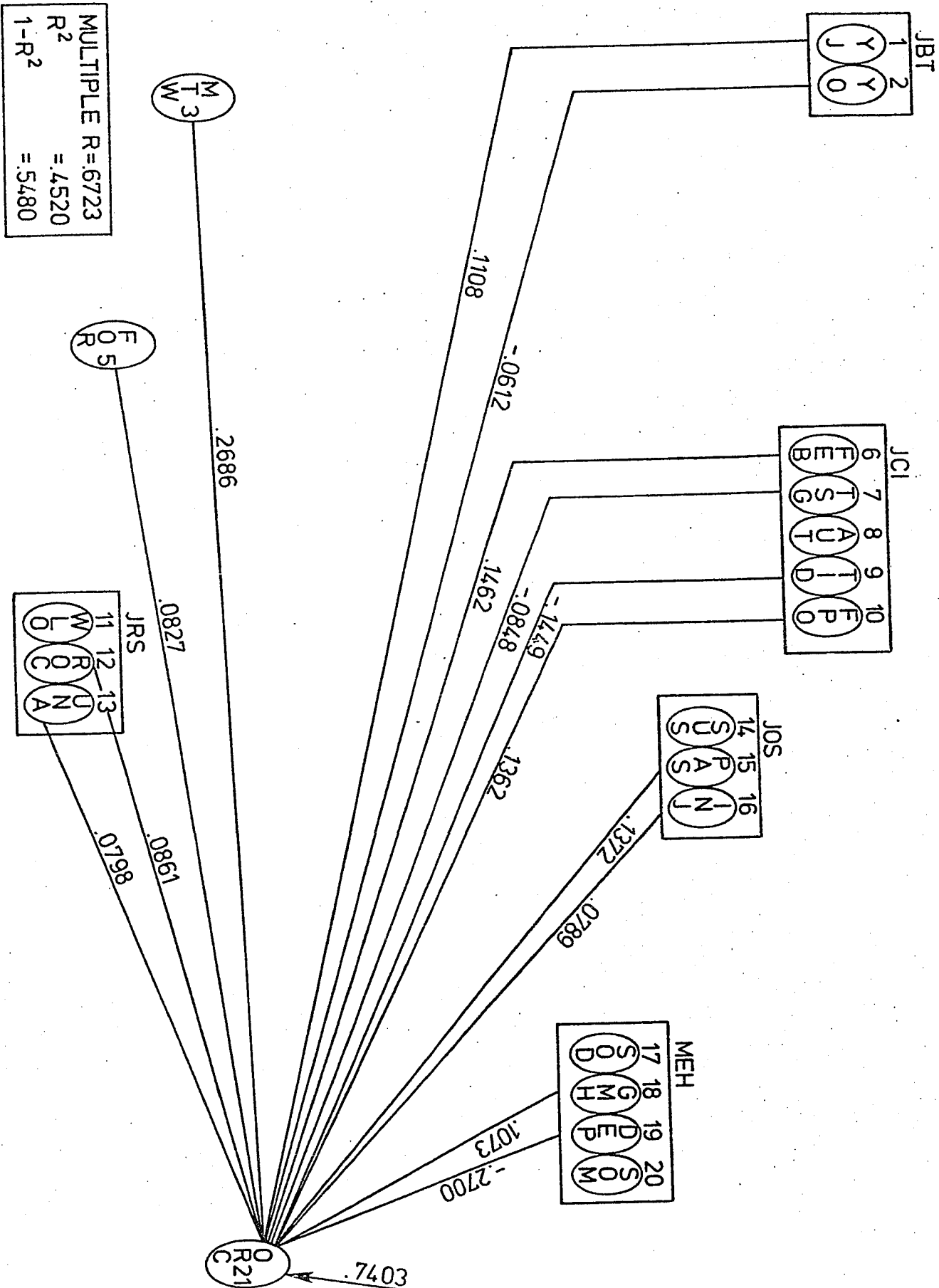


FIGURE 15

TRIMMED PATH DIAGRAM OF ORGANIZATIONAL COMMITMENT FOR WHITE COLLAR WOMEN



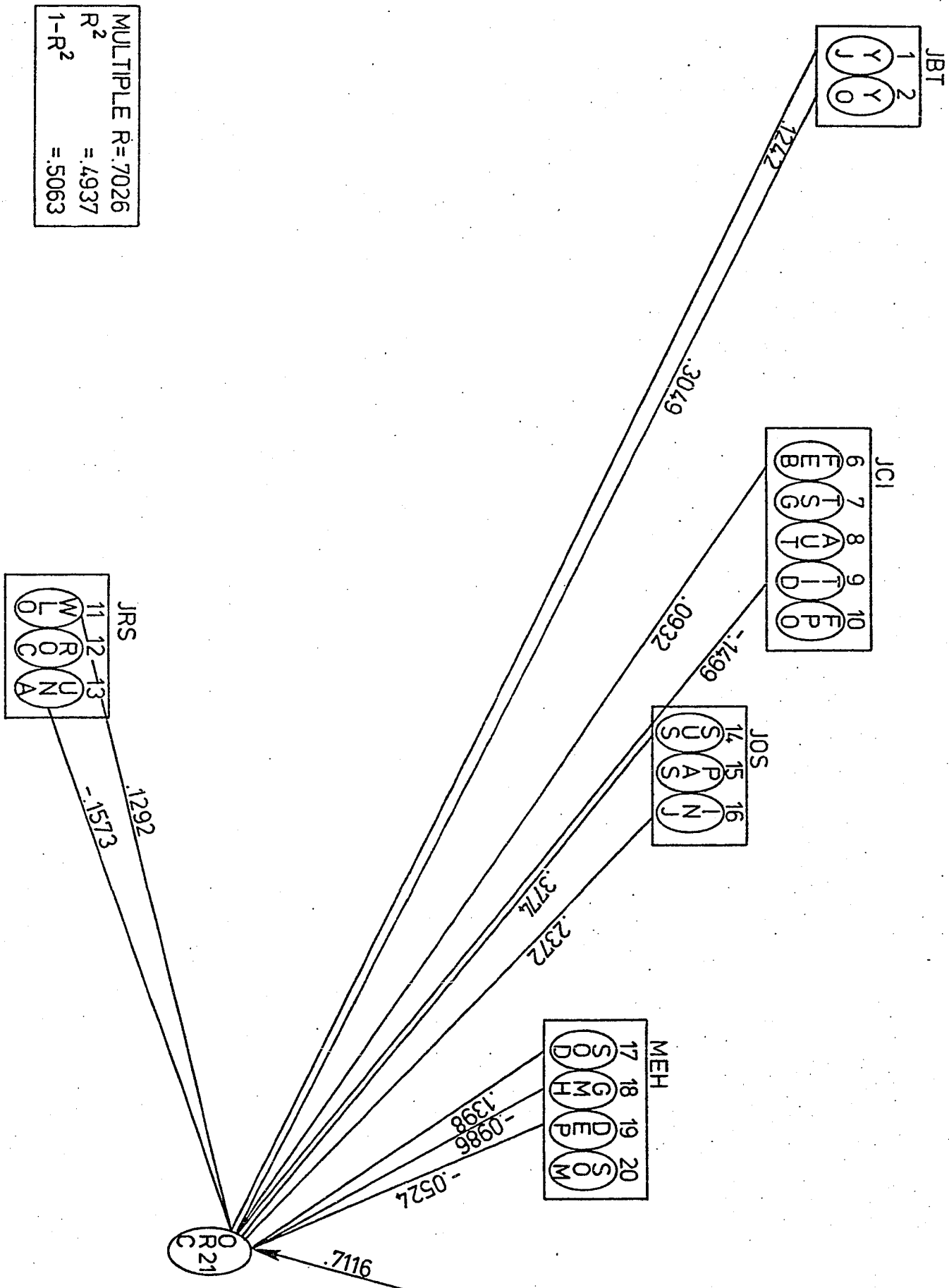
For the professional women, 12 predictors were used in path trimming which left 11 significant paths after two iterations. The barely significant relationship between organizational commitment and decentralization was no longer significant. The results for this sample are shown in Figure 11.

Insert Figure 16 about here

Since the trimming procedure for professional males and white collar males did not result in the deletion of any paths, the path diagrams presented in Figures 7 and 8 mirror the commitment process for the two male samples, despite the fact that some changes in beta weights, multiple Rs and R^2 s occurred.

The theory trimming technique, as used in this research, was employed as a method of testing a priori causal relationships rather than finding a supposedly "valid" model by running a series of regression analyses and throwing out nonsignificant paths. Since the model presented here was fully specified a priori, the estimates of the causal effects are appropriate (i.e. efficient and unbiased - see Goldberger, 1964, p. 262). The more recent extensions of theory trimming which hinge upon the development of confirmatory factor analysis estimation procedures (see Burt, 1974) should be used whenever possible.

FIGURE 16
TRIMMED PATH MODEL OF ORGANIZATIONAL COMMITMENT FOR PROFESSIONAL WOMEN



Nevertheless, the procedure employed here questions the validity of trimming on the basis of theoretical grounds. Trimming a model, then, is trimming a theory; by the same token, finding the best fitting statistical model implies that the "best" theory has been generated in the process. Needless to say that this argument fails to address the issue of whether or not a path model is a theory. Path models are derived from a priori logic and research in a particular content area providing the researcher with causal priorities among variables. However, even the more sophisticated statistical procedures available today do not answer the question whether or not a path model is a theory, and if so, whether the trimming process results in a new and more realistic theory. The theory is a specification of the underlying causal processes, not a description of the correlations between the variables. Theory is explanation rather than description (Hunter & Gerbing, 1982).

Summary of the Results. Many of the results discussed above are intriguing and some of their interpretations remain problematic. However, some general statements may help to pull the findings into perspective. As suggested by Table 17 one way of looking at a summary is by comparing the obtained significant paths across samples. Across all occupational groups, job satisfaction had the most consistent influence on commitment. However, if we examine the facets of job satisfaction more closely, important differences become apparent. Both blue collar and

professional women reported that satisfaction with supervision determined, in part, their identification with organizational goals. Blue collar and white collar female employees, on the other hand, indicated that pay/promotion satisfaction was important for them. The two male samples shared satisfaction with supervision and pay but satisfaction with the ability to use independent judgment was only important for white collar men.

Insert Table 17 about here

The second individual determinant of organizational commitment, tenure, was important for professional men and women as well as for white collar men. Work motivation, the third individual characteristic, did not come into play for the faculty women but was negatively correlated with commitment in male professionals.

The organizational/structural variables produced some unexpected variations among men and women. After two iterations, decentralization was no longer significantly related to organizational commitment in women, but was important for both white collar and professional men. Similarly, formalization, although relevant to commitment in white collar women had significantly greater importance for the two male samples.

Table 17
Number of Supported Hypothesized Model-
Path Coefficient Congruences by Sample

Sample	Total Number of Convergences	Construct Supported	R ²
FBS	5	JS, MEH, MTW, FOR, JRS	.4752
FWN	7	MTW, JS, MEH, JCI, JRS, JBT, FOR	.4527
FPO	5	JS, JBT, MEH, JRS, DEC	.4967
MPN	8	JS, MTW, MEH JC, FOR, JBT JRS, DEC	.5491
MWN	8	JS, MBT, MEH FOR, MTW, JRS, DEC, JCI	.5914

*Constructs here refer to the eight global predictors of organizational commitment depicted in Figure 2. For each sample, they are listed in order of the magnitude of correction coefficients.

The remaining variables, job stress, job dimensions, and mental health suggest that the underlying theoretical premises as well as their operational definitions in terms of the measures most commonly used in industrial/organizational research be re-examined to maximize the fit between current conceptualizations of these constructs and personal parameters which define the work life of most men and women.

Overall, the test of the model on the male sample, although much smaller than the blue collar female sample, resulted in a numerically greater number of path coefficients than were observed for any of the female samples. Moreover, the model best fits the white collar male sample which most closely approximates the "typical" or "average" worker. This implies that the traditional organizational variables may be most relevant and meaningful for this occupational group. Different constructs, some of which are explored in the conclusions may have to be introduced to develop a better understanding of commitment in workers who "deviate from the average." The results obtained here suggest that while global, macro-variables such as formalization and decentralization are significant determinants of commitment for men. For women, on the other hand, micro-variables such as job satisfaction which are more proximal to the employee, are more important in determining commitment.

The purpose of including mental health in this model of organizational commitment as an outcome variable was to

explore the kinds of organizational and job characteristics that may determine the psychological well being of the employee. If organizational commitment is viewed as a positive outcome of the quality of the work experience, the concept can be regarded as a factor contributing to subjective well being at work (Cook & Wall,). However, the results from this research suggest that mental health may also be treated as a predictor of organizational outcomes such as commitment. In order to maximize the predictive power of mental health as a predictor, the use of self-report measures to define health status should be abandoned because such measures are subject to personal distortion. As Kavanagh, Hurst & Rose (1981) noted, considering the threatening nature of requiring a person to report a negative health symptom as well as the inability of most lay persons to correctly diagnose or recognize health symptomatology, makes the use of self-report subjective measures highly suspect. Interviews conducted by trained observers yield much more reliable and valid indices of mental health.

Before discussing the implications of this research for both theory development and practice, a few comments with respect to the analyses are in order. First, as noted in Chapter 3, no claim was made that the model presented here is the only one consistent with the observed data. Second, the analyses employed here are only one method for examining causal relationships. Different path analytic techniques

such as maximum likelihood estimation (Joereskog, 1973; Joereskog & Goldberger, 1975; Joereskog & Soerbom, 1978) known as LISREL (Linear Structural Relationships). LISREL can be utilized which represent major improvements over the more traditional least square methods if the appropriate software is available. LISREL uniquely provides several features: it gives "purified" estimates of the causal processes which have been corrected for measurement error (Maruyama & McGarvey, 1980), multiple factor analyses, significance testing, correlated measurement errors, respecification of the first derivatives, and a simultaneous evaluation of measurement and causal model.

Ideally, causal models utilize longitudinal data to assess the changes in the endogenous variable(s) over time. Unless the measurement of causal processes has been corrected error and has been followed over time, the resulting causal estimates are not as pure as the researcher would like for them to be. Causal relations exist among processes and events, not among numbers (Hunter & Gerbing, 1982).

As was briefly mentioned in Chapter 2, because of the self-report employed in this research, concern with measurement contamination inevitably arises. The measures of commitment and mental health may produce spurious correlations with the predictor variables because they come from the self-reports. The potential bias of perceptual measures, particularly the extent to which they reflect

informational and normative influences rather than objective reality was demonstrated by O'Reilly, Parlette & Bloom (1980) who reported the distorting effects of different frames of reference on a perceptual measure of the core dimensions. In addition, as Wilpert (1975) noted, unfortunately the predominant use of questionnaires in the study of many attitudinal and cognitive factors precludes insight into contingent factors (such as technology) which affect the outcome. Trying to maximize the quality of measurement while interfacing with organizations and accepting organizational realities (i.e. adjusting to the time, number and types of employees an organization is willing to volunteer for research purposes) remains one of the most serious dilemmas for the applied researcher.

Finally, as pointed out before, this research, in contrast to most of the published data reviewed here which used only zero-order correlations, approach hypotheses testing by employing both zero-order correlation and partial regression coefficient analyses simultaneously.

CHAPTER 5

CONCLUSIONS AND IMPLICATIONS

The purpose of this research was to determine causal relationships between individual, job, and organizational/structural variables and organizational commitment and mental health in an attempt to construct a comprehensive model of the commitment process.

The concept of commitment refers to attitudinal and behavioral reactions to the characteristics of the employing organization. Commitment is concerned with feelings of attachment to the goals and values of the organization, the employee's relation to them and attachment to the organization for its own sake rather than its instrumental value. As an attitudinal construct, commitment involves a sense of identification with the organizational mission, a feeling of immersion with organizational duties and affection for the organization as a place to work and to live (Buchanan, 1975). As suggested by Salancik (1977a; 1977b) and Steers (1977), an employee's sense of personal responsibility and importance to an organization are strong concomitants of commitment.

As a behavioral construct, commitment involves the intent to remain with the organization rather than looking for alternate forms of employment, to work hard to achieve the organizational mission and to contribute through performance to organizational effectiveness. The conceptual

framework of organizational commitment proposed and adopted here best fits the "organization behavior approach" advocated by Staw (1977) since organizational commitment was defined and operationalized at a macro level.

The results presented in Chapter 4 are extensive and complex and have many implications for theory development, practice, and follow-up research. In accordance with the three stage model proposed in Chapter 2, the implications of this research are discussed at the three levels outlined by the model: individual, job, and organization. The discourse that ensues evaluates the results within the context of the existing literature and identifies areas in which further research is needed. Overall, the model tested here fits the behavioral model of organizational commitment proposed by Staw (1977), although it contains attitudinal components. As noted in Chapter 2, the behavioral and attitudinal models are not necessarily conflicting, but co-exist.

Individual characteristics on organizational commitment examined the effects of motivation, tenure, and job satisfaction. Work motivation is highly valued by organizations because it is assumed to be an important component of effective job performance (Beehr, Walsh & Taber, 1976). Most of the research (based on zero-order correlations) on the relationship between motivation and work related outcomes indicates that employees at the upper levels of the organization tend to be more motivated,

involved, and interested in their jobs than those at lower levels (Tannenbaum, 1974). Intrinsic motivation as measured by Porter's (1962) need satisfaction questionnaire was relevant for blue collar, white collar women and white collar men but correlated negatively with the commitment of professional men and had no effect on the commitment of professional women. For the professional groups the results suggested that intrinsic needs are not so much satisfied by the organization but rather the profession. In other words, with increasing professionalization of the professions the locus of commitment tends to shift from the organization onto the profession itself.

In addition, as the work of Yankelovich (1979) has demonstrated that contemporary workers may be motivated by needs other than those tapped by Porter's instrument. Since the early 1970's changing patterns of attitudes, values and motives have been noted, especially among managers and professionals (i.e. Miner, 1977; Howard & Bray, 1981) which attest to a decline in managerial motivation. Apparently, most of the commonly used motivation scales do not reflect these changes.

The results with respect to tenure and job satisfaction were discussed in detail. Overall, job tenure predicted organizational commitment better than organizational tenure which in many cases affected commitment negatively. With increasing tenure the employee realizes that his or her opportunities for finding more attractive positions

diminish. The results linking job satisfaction and commitment were consistent with other research (e.g. Salancik, 1977a; Steers & Porter, 1979; Chacko, 1982) which has shown that employee satisfaction with the job enhances organizational commitment.

Organization structure involves a number of different elements, in this case participatory decision-making and formalization, which delineate how individuals, groups and units function (Child, 1972). It was hypothesized that structure is a correlate of commitment because it is an important source of information for the employee conveying information about rules, procedures and policies. By providing this type of information, organizational structure can reduce the amount of uncertainty faced by individuals or work units (Miles, 1980).

Hypotheses 6 through 12 proposed a set of relationships between organizational/structural variables on the one hand, and commitment and mental health on the other. The most important finding from this research was that structural variables had little or no impact on commitment for any of the female samples, but were significantly correlated with men's commitment. Thus, this research implies that hierarchical structures have different effects on men and women.

However, what appears to be a "sex difference" may also be considered a structural phenomenon. As Kanter (1982) noted, women tend to be disadvantageously placed in the

organization opportunity structure and, therefore, seem to confirm the generalizations about "women's organizational behavior" (i.e. interpersonal relationships take preference over more job related aspects of work). Yet, if men are poorly placed in the opportunity structure, they tend to behave in similar ways. For example, Dubin, Hedley & Taveggia (1970) noted that blue collar men whose work was boring, repetitive, and unchallenging and whose chances of mobility were low, developed little attachment to work because work was not a "central life interest."

As Kanter stated, the organizational structure interpretation (e.g. differences in organizational behavior among men and women are due to women's disadvantaged placement in low mobility, low status jobs) avoids the "blame the victim" approach that locates explanations for work behavior in dispositions of the individual; instead the real villain may be the very nature of the organizational hierarchy. Considering the analyses used, this research implies that other variables are more critical to women. As observed in this research, women pay much less attention to broad organizational variables than they do to factors more proximal to them.

Although the predicted positive relationship between organizational structure and commitment was not supported for women, decentralization had a number of significant correlations with some of the remaining construct variables. For example, with the exception of the negative correlation

between satisfaction with supervision and decentralization in male professionals, participation in decision-making was positively related to at least some facets of job satisfaction. This effect was the strongest employees for the faculty sample. This finding suggests that at least for the four samples, employees at various organizational levels who have a "say" with regard to either what happens in the organization generally or with regard to more specific subjects such as task assignments are more satisfied with their jobs.

The relationships between decentralization and the three stressors, work load, role conflict, and underutilization of abilities, were positive for most of the observed correlations. In other words, the more employees participated in the decision-making process, the greater their workload, the more role conflict they experienced, but also the greater the extent to which they could apply previously acquired skills to their current jobs.

The effects of decentralization on mental health, focusing on the general health factor, showed that decision-making had negative consequences for mental health, partly because of the fact that it was perceived as stressful. The findings obtained here imply that decentralization may not necessarily be additive, i.e. the more participatory decision-making opportunities an employee has, the more he or she wants. The opposite, as observed here, is equally possible; if experience with decentralization is perceived

as stressful, desire for further participation may decline. The impact of decentralization on the stress and mental health variable suggests that examinations of participatory decision-making in the traditional terms of productivity and satisfaction (Locke & Schweiger, 1979) may be too narrowly focused.

Theory (e.g. Ford & Slocum, 1977; Pugh et al., 1976) suggests that participative decision-making should be more successful in smaller than in larger organizations because in smaller organizations communications are easier, employees know more about the organization as a whole, and the knowledge gap between the worker and management is narrower. If this argument is correct, decentralization should have had the largest effect on the faculty women because the university was the smallest of the participating organizations. However, as in other quantitative studies (e.g. Tannenbaum, Kovcis, Rosner, Vianello & Wieser, 1974), this study failed to support the relationship between size and decentralization.

With regard to the second structural variable, traditional views of formalization or the control of job activities by administrative rules and procedures, assumed that formalization increases commitment. This assumption was supported for four of the samples. The results for the male professional and white collar groups as well as for the blue and white collar women indicated that for these occupations groups formalization indeed provided as basis

for identification with the organization. The effects of formalization were the strongest for the male professional sample, most likely due to the fact that engineering work in most organizations is associated with high levels of administrative control. The findings are consistent with Organ and Greene (1981) who suggested that the positive correlation between formalization and organizational identification in their sample of male engineers and scientists can be explained on the basis of "institutional motivation" (Glaser, 1963), according to which formalization serves to articulate the congruence between organizational mission and professional goals. Engineers apparently like structure which characterizes their training as well as the nature of their work.

As pointed out in the introduction, this research attempted to integrate findings from areas which have not been linked conceptually in the past, particularly in relation to core job dimension, job stress and structure and to examine the role of mental health within the context of these variables. The results showed that the overall predictability of the core dimensions as measured by the JCI as a major predictor of organizational commitment were considerably lower than inferred from the literature. Clearly, the role of the core dimensions did not prove to be as strong or consistent as presented in the hypotheses in Chapter 2. Not for a single sample did all five core dimensions contribute significantly to commitment (or for

that matter, any of the other variables). In fact, some JCI factors behaved rather counterintuitively, as in the case of negative correlations between feedback and commitment. Again, as noted earlier, different analyses, i.e. zero-order correlations and partial regression coefficients used here account for some of the differences between these results and other published findings.

The poor performance of the job characteristic model within the proposed nomological net can be accounted for by a number of methodological shortcomings which have begun to appear in the literature with a certain degree of consistency (e.g. Roberts & Glick, 1981; Hugh & House, 1980). Salancik and Pfeffer (1977), for instance, hypothesized that the observed correlations between job characteristics and job attitudes such as satisfaction and commitment may not be indicative of the true underlying causal relationships between these variables but rather may be an artifact of the order in which the variables are measured. In most studies (including this one) the core dimension measures precede the assessment of job attitudes. Consequently, it may be argued that information regarding job characteristics is made salient to respondents immediately prior to being asked their reactions about their jobs.

Other research has questioned the directionality of causality assumed to exist between characteristics of the job and job attitudes. Two decades of research on job

design have been generally based on the assumption that the core dimensions affect job attitudes rather than vice versa (e.g. Hackman & Oldham, 1976; Westley, 1979). However, Roberts and Glick's (1981) critical review of the job characteristic model demonstrated that conceptually as well as substantively the evidence for a unidirectional relationship between job attitudes and the job dimensions does not support this assumption unequivocally. Recently, James and Jones (1980) and Caldwell and O'Reilly (1980) showed that affective responses (i.e. job satisfaction) result in differential perceptions of task characteristics among satisfied and unsatisfied workers. Employees who felt more satisfied also described their jobs in more positive terms (i.e. offering greater opportunity, more feedback). This research suggests that more sophisticated methodologies such as reciprocal causal model be employed to re-examine the relationship between the core dimensions and workers' affective reactions to their jobs (and the organization).

Other criticisms of the job characteristic model have addressed some of the psychometric problems that still beset the measure, both JDS and JCI. Ferrat, Dunham and Pierce (1981) who examined self-report measures of job characteristics and their relationship to a variety of affective measures including the JCI and MSQ concluded that the two constructs, job characteristics and job satisfaction, as they are currently operationalized, cannot be adequately discriminated from one another. The highest

correlation observed in this research was .60 between feedback and satisfaction with supervision. Other research (e.g. Drasgow & Miller) that employed the fidelity coefficient to demonstrate that not all JCI scores for the various subscales can be used as if they are underlying construct scores. These authors reported that only three subscales (autonomy, feedback, and friendship opportunities) had sufficiently high fidelity coefficients to provide adequate measurement of their associated constructs. The remaining scales (task identity, task variety, and dealing with others) yielded unsatisfactory results and need more work before they can be used as accurate representations of the underlying constructs.

This research predicted that a substantial proportion of variance in organizational commitment would be explained by the core dimensions. Since this hypothesis was not supported, this research challenges the construct validity of the JCI because the job characteristic model predicts positive associations between workers' perceptions of their jobs and affective responses which were not supported. Thus, the conclusion that redesigning jobs to make them high on the core dimensions lead to greater commitment cannot be ruled out because of the methodological and psychometric problems that surround our current conceptualization and measurement of the job characteristics.

The findings of this research with regard to the stress variables supported Levi's (1972) and Cox's (1978) analyses

of job stress which indicated that the condition of stress may be viewed as being positive (by an opportunity) as well as being negative (by a constraint or demand). Levi (1972) in his model of stress, suggested that there may be "desirable regions" from the standpoint of both subjective and objective employee responses in which stress can have positive effects. Four of the five samples in this research reported that having to process a greater work load had a positive impact on their commitment. Delineating these "desiraable regions" is one of the major tasks confronting the stress researcher. Rather than always giving definitions of stress a "bad name," the positive effects need to be explored and incorporated in definitions of job stress. Cox's (1978) interactional definition and model of job stress as a complex and dynamic system of transaction between the person and the environment which draws from both response-and stimulus-based definitions provides a theoretical framework that accommodates both negative and positive aspects of job stress. The five stage model identifies sources of demand stemming from both the person and the environment, the person's perception of the demand and his or her ability to cope with it. As Cox pointed out, it is essential to realize that the important balance or imbalance is not between demand and actual capability, but between perceived demand and perceived capability. The third stage is represented by the response to stress or the coping strategies available to the person. The fourth stage

is concerned with the consequences of the coping responses while the fifth stage involves feedback, that is, it concerns the effectiveness of the stress response in coping. This multistage model can successfully predict the outcome of positive and negative experiences with job stress.

The results showed that overall the proposed model "explained" organizational commitment better for men than it did for women. One possible explanation is that the model omitted variables particularly relevant to female experiences at the work place. Rather than focusing on the traditional constructs embodied in this model, it seems reasonable to argue that organizations which try to accommodate women's multiple roles are likely to have a committed female membership. For example, organizations which assist women with child care arrangements may be more successful in building commitment in female employees than companies which attempt to increase work motivation by sending women to training seminars or providing them with expense accounts. Similarly, cafeteria benefits which allow employees to select benefit programs that most fit the family needs, may be more "committing" than participatory decision-making. Yet, most corporate benefit programs are still designed to accommodate the single income family despite estimates that this family type now accounts only for 20 percent of the U.S. labor force.

Another untapped factor which may enhance commitment is the adoption of policies which allow husbands and wives to

be employed by the same company or to share the same job. Although nepotism is one of those sinister words that no one likes to say aloud, being a corporate couple can have personal as well as organizational advantages which can facilitate organizational bonding. One advantage to the organization is that both men and women may be particularly attracted to an image of a corporation that cares about its employees and is family oriented. Given the large number of working couples and the variety of living arrangements today, anti-nepotism rules may be no longer particularly effective. Making both spouses' employees puts the organization in a position of handling both careers with some degree of parity which is likely to result in positive outcomes for the couple and the organization since the inability to find joint employment can undermine loyalty and cause dissatisfaction as well.

The absence of women from most empirical studies of commitment and the possible irrelevance of traditional organizational concepts such as decentralization and formalization restrict the construct validity of commitment to the "average" worker which was represented by the male white collar worker. For this occupational group, as well as for professional workers of both sexes, research is quite diverse but research on skilled and semiskilled workers and blue collar workers is amazingly limited. Moreover, studies of professionals and managers reflect a much broader cross section of occupational types, occupational settings and

work related issues than do studies focusing on the experiences of blue and white collar workers. For example, the nature of clerical work has changed profoundly since the introduction of electronic data processing as the latest stage in automation (Rico, 1967). With the introduction of the word processor and other technology, clerical tasks have become externally structured and controlled rather than being organized around mental abilities. Yet, the effects of this technology on the nature of clerical work and the workers have been insufficiently examined and no attempts have been made to reconcile contradictory conclusions (Shephard, 1971; 1973).

Similarly, despite the increase of women in the skilled trades, a model of integrating women into the blue collar field (or any male oriented occupation) has yet to be developed. The problem is further compounded by the fact that little attention has been paid to shifts in the overall distribution of occupations. There is a rich body of literature on the "organization man" and a sizable body of research on the experiences of men and women working in professional and managerial jobs, but other areas such as the migration of women from pink to blue collar jobs are, by and large ignored.

Clearly, there are some significant gaps in our understanding of the present work force: gaps resulting from our failure to study a sufficient variety of occupational settings and from our failure to capture the

diversity of job types within organizations. Consequently, many generalizations about the work experiences do not hold water in a different work context, with a different set of workers.

Obviously, this research highlights the needs for more theory based comparisons of male and female organizational behavior. Few studies exist that compare attachment of organizational goals and values of male and female employees. Nevertheless, it is widely believed that men and women differ in their attachments and that these differences are directly attributable to the types of jobs available to men and women.

As was shown in this research, employees in different occupations are characterized by different types of commitment. Regardless of occupational category, however, the term organizational seduction (Lewicki, 1981) has been suggested to describe the socialization process involved in developing commitment. Overall, the commitment model proposed in this research suggests that in order to effectively seduce an employee, organizations need to provide the worker with jobs that minimize their dissatisfaction and design jobs that are linked to larger goals and tailored to the skills of the employee while at the same time appealing and satisfying both intrinsic and extrinsic needs.

From a theoretical perspective this research has shown that the construct of organizational commitment requires

both theoretical as well as measurement refinement. Presently, most researchers view commitment as a unitary construct although there is quite a diversity of definitions. Organizational commitment has been defined as loyalty to social systems (Kanter, 1968), exchange in terms of organizational inducements (March & Simon), the binding of an individual to behavioral acts (Kiesler, 1971) or behaviorally in terms on the employee's intent to stay with the organization (Porter et al., 1974), to exert effort on behalf of the organization or to work hard to attain the overall organizational mission.

This research, which attempted to expand the nomological net of the commitment construct, suggests that the concept of commitment be redefined to include a typology of commitment which incorporates not only attitudinal and behavioral components but also cognitive elements which are currently missing from conceptualizations of organizational commitment. Festinger's (1966) work suggested that people develop attitudes consistent with their choices. When a person is committed to a choice such as having joined an organization, he or she, as cognitive dissonance theory predicts, will resolve inconsistencies to produce attitudes consistent with the choice. One cognitive element based on the emergent relationship between commitment and job stress reported in this research is the cognitive appraisal of the employee of a variety of organizational factors such as decentralization or job characteristics such as feedback.

Furthermore, the relationship between commitment and subsequent performance needs to be built into the conceptual framework. Steers and Porter (1979) reported that the major benefit of highly committed employees lies in increased attachment but not necessarily in increased performance. The link between commitment and performance needs to be more clearly established for high levels of individual commitment to contribute to effective organizational functioning.

CONCLUSIONS

In conclusion, then, the present research was designed to uncover causal relationships between organizational commitment and mental health on the one hand, and a number of individual, job and organizational variables. What this research accomplished most was to delineate a conceptual framework for the study of commitment. Although the model proposed here identified differential antecedents of organizational commitment in male and female employees as well as among employees across different occupational categories, all of the hypothesized variables were significant for at least one of the occupational categories sampled in this research. Since there is hardly a model that can maximize accuracy, generality and parsimony at the same time, all one can hope to accomplish is to develop a model that "works" in the actual setting. In this research the model worked best for the typical worker, traditionally

defined as the white collar man. For the remaining occupational categories, further research is needed to determine satisfying trade-offs between the validity and the utility of this model.

The following are the highlights of this multi-organizational, multisample research:

1. Examining organization commitment with path analytic techniques indicates the theories and antecedents of commitment require further conceptual development and refinement.
2. The commitment model developed and tested in this research suggests different antecedents of commitment for men and women. Although the model is quite consistent with previous research and fits the two male samples, variables are missing in the prediction of commitment in women based on the model proposed here.
3. The model behaves somewhat strangely for blue collar women; clearly, more research is needed in this area.
4. In order to enhance organizational commitment, management needs to be sensitive to the needs of men and women which, as this research has shown, differ

as well as to the needs of employees in specific occupational categories (i.e. blue collar vs. white collar vs. professional employees).

Reference Notes

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APPENDICES

APPENDICES

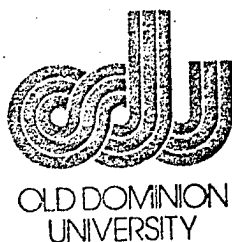
- A. Organizational Commitment Survey
- B. Endorsements From Participating Organizations
- C. Supplementary Statistics
- D. Miscellaneous

APPENDIX A

- A 1 Cover Letter
- A 2 Instructions
- A 3 Section 1 - Motivation to Work Scale
- A 4 Section 2 - Decentralization/Formalization Scale
- A 5 Section 3 - Job Characteristic Inventory (JCI)
- A 6 Section 4 - Job Stress Questionnaire
- A 7 Section 5 - Minnesota Satisfaction Questionnaire (MSQ)
- A 8 Section 6 - General Health Questionnaire (GHQ)
- A 9 Section 7 - Organizational Commitment Questionnaire (OCQ)
- A 10 Section 8 - Biographical Information

Organizational Commitment Survey

A 1



Old Dominion University • (804) 440-3000 • Norfolk, VA 23508

April 16, 1982

Dear Norfolk Naval Shipyard Employee:

Research on women in the workforce has emerged as one of the most exciting and fruitful areas of scientific investigations. Over the last decade much has been learned about the progress of women in managerial jobs but women's entry into the skilled trades, traditionally "men only" jobs, has received much less attention. Today, through efforts of the government as well as some private employers, women are actively encouraged to consider entering a skilled area as a viable occupational alternative.

As a doctoral candidate in industrial organizational psychology, I am interested in studying the dynamics of organizational commitment of women and men in a variety of organizational settings and need your help in this research effort. As members of the blue collar workforce, only individuals like yourself can provide the information to further our understanding of the needs of women in nontraditional jobs. For that reason, I am particularly grateful to have the support of your commanding officer, Commandore Donohue in soliciting your cooperation in this research.

The enclosed survey contains a set of questionnaires which deals with various aspects of your job. It will take 30 to 40 minutes of your time. Please take this time and complete the attached questionnaires. Each section of the survey includes instructions to aid you in completing it. Since there are no right or wrong answers, I recommend that you do not dwell excessively on any particular item, even if you encounter a question or statement you have never really thought about before. However, please give me your honest opinion. As you complete the survey, you may notice similarities among some of the items. There are two reasons for this. First, the same question may be asked in different ways in order to provide a more reliable measure of your opinion. Second, different sections may address different aspects of the same or similar aspects of your job.

Answers to all questions of the attached survey will be treated anonymously and completely confidentially. Your name will never be associated with this data and upon completion of the data analysis, all records will be destroyed. If you are interested in receiving a copy of the results of this research, please write "copy of results requested" in the right hand corner of the biographical information section at the end of the survey and print your name and address below.

At the very end of the survey you find a form entitled "Informed Consent." I would need your signature on this form since participation in this research is voluntary. However, you only need to sign your name next to "signature" and do not have to fill in any of the other lines.

I would be most happy to answer any questions you might have. Please feel free to call me at 440-4452. I am most grateful for your assistance and your contribution to this research.

Sincerely,

Karin Hamel

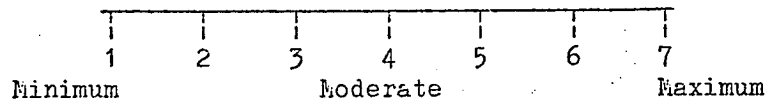
Karin Hamel
ABD, Industrial/Organizational
Psychology

Kh/bms

Instructions

This survey is designed to identify factors which determine organizational commitment in working men and women. Please complete the attached questionnaires responding to each question or statement in terms of your present job. Since there are no right or wrong answers to any of the items, please answer them in the way that most accurately gives your opinion. Please do not omit any section or item.

Each rating will be made on a 7-point scale which will look like this:



representing the amount or degree of certain aspects or characteristics of your job. Low numbers represent low or minimum amounts, never or very little of a given characteristic presently associated with your job. If you think there is very little of a specific aspect in your current job, you would make a rating of 1; if you think your job has a maximum of that characteristic, you would make a rating of 7; if you think there is a great deal of a given characteristic in your job, but not maximum, you would make a rating of six, and so on.

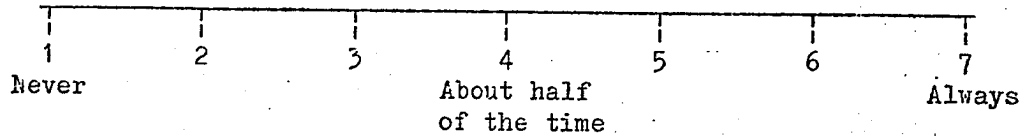
Each section of this survey is presented in the standard 7-point rating form. However, since the wording varies somewhat from one section to another, each section is preceded by its own response scale to be used for your answers. You will find a blank to the left of each question or statement. Please write the number corresponding to your rating in the blank to the left of each item.

Again, all of your answers will be held in strict confidence and you can be assured that no one other than the principal investigator of this research will ever see your responses.

A 4
Section Two

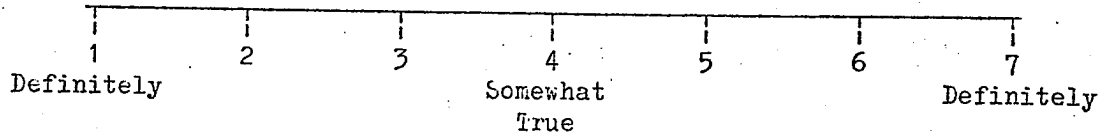
This part of the questionnaire asks you to describe some characteristics of your work place. Please respond to each question or statement as it applies to the organization where you work.

Use this scale to respond to questions 1-4



- _____ 1. How frequently do you participate in the decision on the adoption of new programs?
- _____ 2. How frequently do you participate in decisions on the adoption of new policies?
- _____ 3. How frequently do you participate in the decision to hire new staff?
- _____ 4. How frequently do you participate in decisions on promotions?

Use this scale to respond to statements 5-12

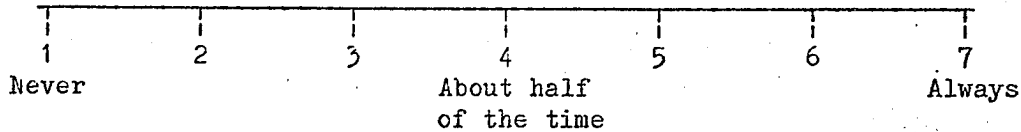


- _____ 5. There can be little action taken here until a supervisor approves a decision.
- _____ 6. How things are done here is left up to the person doing the work.
- _____ 7. The employees here are constantly checked for rule violations.
- _____ 8. Whatever situation arises we have procedures to follow in dealing with it.
- _____ 9. Everyone has a specific job to do.
- _____ 10. Going through the proper channels is constantly stressed.
- _____ 11. This organization keeps written records of everyone's job performance.
- _____ 12. We are to follow strict operating procedures.

A 4
Section Two

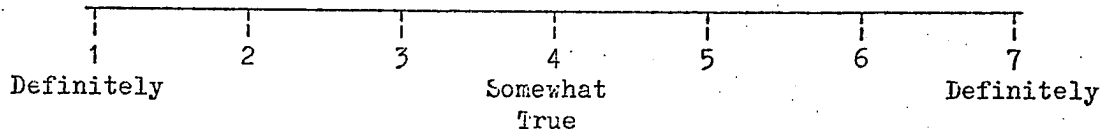
This part of the questionnaire asks you to describe some characteristics of your work place. Please respond to each question or statement as it applies to the organization where you work.

Use this scale to respond to questions 1-4



- _____ 1. How frequently do you participate in the decision on the adoption of new programs?
- _____ 2. How frequently do you participate in decisions on the adoption of new policies?
- _____ 3. How frequently do you participate in the decision to hire new staff?
- _____ 4. How frequently do you participate in decisions on promotions?

Use this scale to respond to statements 5-12

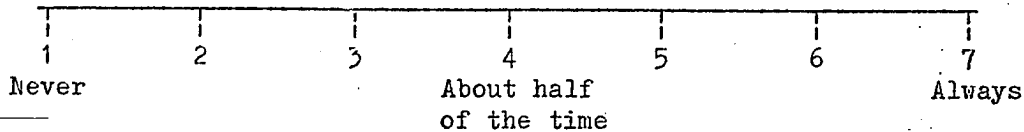


- _____ 5. There can be little action taken here until a supervisor approves a decision.
- _____ 6. How things are done here is left up to the person doing the work.
- _____ 7. The employees here are constantly checked for rule violations.
- _____ 8. Whatever situation arises we have procedures to follow in dealing with it.
- _____ 9. Everyone has a specific job to do.
- _____ 10. Going through the proper channels is constantly stressed.
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A 4
Section Two

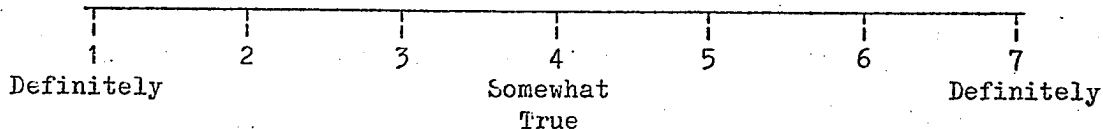
This part of the questionnaire asks you to describe some characteristics of your work place. Please respond to each question or statement as it applies to the organization where you work.

Use this scale to respond to questions 1-4



- _____ 1. How frequently do you participate in the decision on the adoption of new programs?
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- _____ 3. How frequently do you participate in the decision to hire new staff?
- _____ 4. How frequently do you participate in decisions on promotions?

Use this scale to respond to statements 5-12



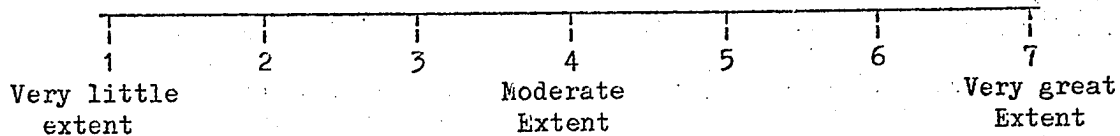
- _____ 5. There can be little action taken here until a supervisor approves a decision.
- _____ 6. How things are done here is left up to the person doing the work.
- _____ 7. The employees here are constantly checked for rule violations.
- _____ 8. Whatever situation arises we have procedures to follow in dealing with it.
- _____ 9. Everyone has a specific job to do.
- _____ 10. Going through the proper channels is constantly stressed.
- _____ 11. This organization keeps written records of everyone's job performance.
- _____ 12. We are to follow strict operating procedures.

Section Three

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. Instead, try to make your description as accurate and objective as you possibly can.

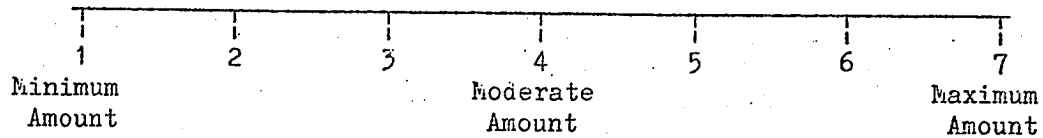
Use this scale to respond to questions 1-11 in terms of how well the item actually describes your job

Response Scale



- _____ 1. To what extent do you find out how well you are doing on the job as you are working?
- _____ 2. To what extent do you see projects or jobs through to completion?
- _____ 3. To what extent are your job duties repetitious?
- _____ 4. To what extent are you able to act independently of your supervisor in performing your job functions?
- _____ 5. To what extent do you receive information from your supervisor on your job performance?
- _____ 6. To what extent do you have the opportunity to talk informally with other employees while at work?
- _____ 7. To what extent is dealing with other people a part of your job?
- _____ 8. To what extent are the tasks you perform in a typical work day similar?
- _____ 9. To what extent are you able to do your job independently of others?
- _____ 10. To what extent are the results of your work clearly evident?
- _____ 11. To what extent are the results of your work likely to have important effects on other people?

Use this scale to respond to statements 12-33
in terms of how well it actually describes your job.

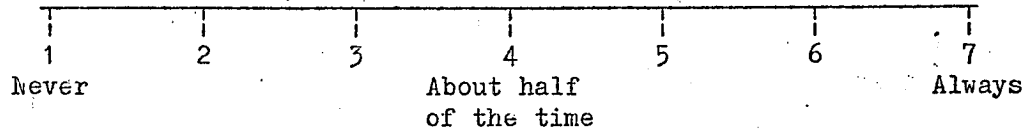


- ___ 12. Feedback from my supervisor on how well I'm doing.
- ___ 13. Friendship from my co-workers.
- ___ 14. Opportunity to do a number of different tasks.
- ___ 15. Freedom to do pretty much what I want to do on my job.
- ___ 16. Opportunity to find out how well I am doing on my job.
- ___ 17. Opportunity in my job to get to know other people.
- ___ 18. Amount of variety in my job.
- ___ 19. Opportunity for independent thought and action.
- ___ 20. Opportunity to complete work I start.
- ___ 21. Significance of my job to the organization as a whole.
- ___ 22. The feeling that I know whether I am performing my job well or poorly.
- ___ 23. Opportunity to develop close friendships in my job.
- ___ 24. Meeting with others in my work.
- ___ 25. The control I have over the pace of my work.
- ___ 26. Opportunity to do a job from the beginning to the end (i.e., the chance to do a whole job).
- ___ 27. The extent of feedback I receive from individuals other than my supervisor.
- ___ 28. Impact of the quality of my work on others.
- ___ 29. How much variety is there in your job?
- ___ 30. How much are you left on your own to do your own work?
- ___ 31. How much opportunity is there to meet individuals whom you would like to develop friendship with?
- ___ 32. How much of your job depends upon your ability to work with others?
- ___ 33. How much of the work you are involved with is handled from beginning to end by you?

Section Four

The questions in this part of the questionnaire deal with different aspects of your work. Please make sure that your answer is based on your job today.

Use the scale below to indicate how often these job aspects appear in your job

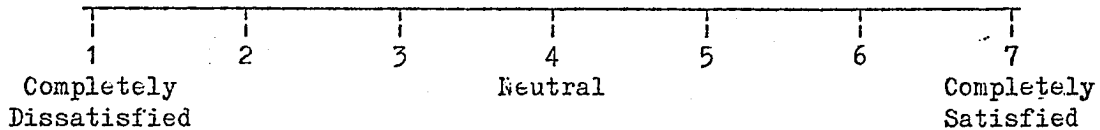


- _____ 1. How often does your job require you to work very fast?
- _____ 2. How often does your job require you to work very hard?
- _____ 3. How often does your job leave you with little time to get things done?
- _____ 4. How often is there a great deal to be done?
- _____ 5. How often do you experience a large increase in work load?
- _____ 6. How often do persons equal in rank and authority over you ask you to do things which conflict?
- _____ 7. How often do people whose requests should be met give you things to do which conflict with other work you have to do?
- _____ 8. How often are you unclear on what your job responsibilities are?
- _____ 9. How often can you predict what others will expect of you on the job?
- _____ 10. How much of the time are your job performance standards well defined?
- _____ 11. How often does your job let you use the skills and knowledge you have learned in school or during training?
- _____ 12. How often are you given a chance to do the things you know to do best?
- _____ 13. How often can you use the skills from your previous experience and training?

Section Five

Now please indicate how satisfied you are with each aspect of your present job. Using the seven-point scale again, you are asked to indicate the degree of your satisfaction or dissatisfaction with each statement. Once again, write the appropriate number in the "blank" beside each statement.

Response Scale

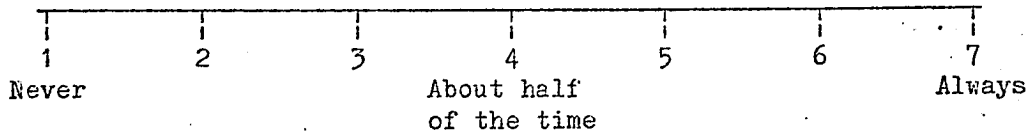


- _____ 1. Being able to keep busy all the time.
- _____ 2. The chance to work alone on the job.
- _____ 3. The chance to do different things from time to time.
- _____ 4. the chance to be "somebody" in the community.
- _____ 5. The way my boss handles his men.
- _____ 6. The competence of my supervisor in making decisions.
- _____ 7. Being able to do things that don't go against my conscience.
- _____ 8. The way my job provides for steady employment.
- _____ 9. The chance to do things for other people.
- _____ 10. The change to tell people what to do.
- _____ 11. The chance to do something that makes use of my abilities.
- _____ 12. The way company policies are put into practice.
- _____ 13. My pay and the amount of work I do.
- _____ 14. The chance for advancement on this job.
- _____ 15. The freedom to use my own judgment.
- _____ 16. The chance to try my own methods of doing the job.
- _____ 17. The working conditions.
- _____ 18. The way my co-workers get along with each other.
- _____ 19. The praise I get for doing a good job.
- _____ 20. The feeling of accomplishment I get from the job.

Section Six

Below are some statements about how people may feel. When you think about yourself in your job, how much of the time do you feel this way?

Response Scale

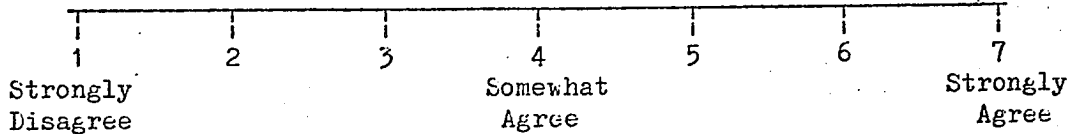


- ___ 1. I feel perfectly well and in good health.
- ___ 2. I am able to concentrate on what I am doing.
- ___ 3. I find myself waking early and unable to get back to sleep.
- ___ 4. I feel too tired and exhausted even to eat.
- ___ 5. I lose much sleep over worry.
- ___ 6. I feel full of energy.
- ___ 7. I manage to keep myself busy and occupied.
- ___ 8. I tend to lose interest in my ordinary activities.
- ___ 9. I manage as well as most people would in my shoes.
- ___ 10. On the whole I feel that I am doing things well.
- ___ 11. I have been late getting to work.
- ___ 12. I feel it easy to get on with other people.
- ___ 13. I feel capable of making decisions about things.
- ___ 14. I feel I cannot overcome my difficulties.
- ___ 15. I am getting edgy and bad-tempered.
- ___ 16. I am able to face up to my problems.
- ___ 17. I feel unhappy and depressed.
- ___ 18. I am losing confidence in myself.
- ___ 19. I find everything is getting on top of me.
- ___ 20. I feel hopeful about my own future.

Section Seven

Listed below are a series of opinions that individuals might have about the company or organization for which they work. With respect to your own feelings about the particular organization for which you work indicate the degree of your agreement or disagreement with each statement.

Response Scale



- _____ 1. I am willing to put in a great deal of effort beyond that normally expected in order to help this organization be successful.
- _____ 2. I talk up this organization to my friends as a great organization to work for.
- _____ 3. I feel very little loyalty to this organization.
- _____ 4. I would accept almost any type of job assignment in order to keep working for this organization.
- _____ 5. I find that my values and the organization's values are very similar.
- _____ 6. I am proud to tell others that I am part of this organization.
- _____ 7. I could just as well be working for a different organization as long as the type of work was similar.
- _____ 8. This organization really inspires the very best in me in the way of job performance.
- _____ 9. It would take very little change in my present circumstances to cause me to leave this organization.
- _____ 10. I am extremely glad that I chose this organization to work for over others I was considering at the time I joined.
- _____ 11. There's not too much to be gained by sticking with this organization indefinitely.
- _____ 12. Often, I find it difficult to agree with this organization's policies on important matters relating to its employees.
- _____ 13. I really care about the fate of this organization.
- _____ 14. For me this is the best of all possible organizations for which to work.
- _____ 15. Deciding to work for this organization was a definite mistake on my

Section Eight

Biographical Information

The following information is needed for data analyses only. No attempt will be made to identify individual respondents.

Name of the organization: _____

Department: _____

Job Type: _____ Professional
_____ Managerial
_____ Technical
_____ Clerical
_____ Skilled Trade
_____ Other (please specify)

Sex: _____ Female _____ Male

Years at present job:

How long have you been in your present position, that is, your particular job where you work now?

_____ less than 1 year
_____ between 1 and 3 years
_____ between 4 and 6 years
_____ between 6 and 10 years
_____ more than ten years

Total years employed by present organization:

_____ less than 1 year
_____ between 1 and 3 years
_____ between 4 and 6 years
_____ between 6 and 10 years
_____ more than ten years

Employment:

_____ Full time _____ Part time

Income:

_____ less than \$6,000 per year
_____ between \$6,000 and \$10,000 per year
_____ between \$15,000 and \$20,000 per year
_____ between \$20,000 and \$25,000 per year
_____ more than \$25,000 per year

Financial Dependence:

My household is completely dependent upon my income.

_____ Yes

_____ No

Years of schooling:

- ☐ Grade school not completed
- ☐ Grade school completed
- ☐ High school not completed
- ☐ High school completed
- ☐ High school completed plus other non-college training
(technical or trade school)
- ☐ Some college
- ☐ Bachelors degree
- ☐ Some graduate work
- ☐ Master's degree
- ☐ Advanced degree

Age:

- ☐ Under 20
- ☐ Between 20-24
- ☐ Between 25-34
- ☐ Between 35-44
- ☐ Between 45-54
- ☐ 55 or older

Marital Status:

- ☐ Single
- ☐ Married
- ☐ Separated
- ☐ Divorced
- ☐ Widowed

Number of children:

- ☐ one
- ☐ two
- ☐ three
- ☐ four
- ☐ more than four

Number of children under age six:

- ☐ one
- ☐ two
- ☐ three
- ☐ four
- ☐ more than four

APPENDIX B

Endorsements By Participating Organizations

- B 1 Letter from the Chairman (ODU)
- B 2 Permission by the Commandore (NNSY)
- B 3 Letter of support from the Commanding Officer (NARF)
- B 4 Announcement of the Organizational Commitment Survey in NARF Newsletter

B 1



Old Dominion University • (804) 440-3000 • Norfolk, VA 23508

Dear Faculty Member:

Ms. Karin E. Hamel, a doctoral student in our Industrial/Organizational program and a former instructor on our faculty, is beginning her dissertation research, the last step in earning her doctorate. Her dissertation requires the cooperation of women from three professions as subjects, and she has chosen to incorporate faculty from here at ODU as one of them. The task we are requesting you to do is to complete a five-page questionnaire that will require about 30 minutes of your time. The number of questions that she is asking has been reduced as much as we think it can be.

The dissertation research that Karin is conducting requires a large number of subjects and there are barely enough women on the faculty of ODU to meet the requirements of her study; so it is important that virtually all of our women faculty participate for her to include ODU women faculty as one of her professional groups. Thus, it is particularly important that all of you participate if you possibly can. The only rewards or incentives that we can offer you are our gratitude, whatever pleasure you may find from completing the questionnaire, and the pleasure you will have from watching Karin receive her doctorate at a future commencement and knowing that you played a significant part in that accomplishment of hers and ours.

Sincerely,

Raymond H. Kirby

Raymond H. Kirby, Chair
Department of Psychology

RHK/bms



B 2

DEPARTMENT OF THE NAVY
NORFOLK NAVAL SHIPYARD
PORTSMOUTH, VIRGINIA 23709

248

29 July 1981

Ms. Karin Hamel
Department of Psychology
Old Dominion University
Norfolk, Virginia 23508

Dear Ms. Hamel:

Your 14 July 1981 letter, outlining your research project to identify job characteristics that hold psychological meaning for female workers, expressed a desire to include a sample of blue collar women from the shipyard. Such a project would be of interest to the shipyard. Research efforts and findings should be coordinated through our Equal Employment Opportunity Office, headed by Mr. John Ashby. Mr. Ashby or a member of his staff will contact you to coordinate this effort.

I am looking forward to your findings and analysis.

Yours truly,

D. P. DONOHUE
Captain, USN
Shipyard Commander

Grapevine

Naval Air Rework Facility, Norfolk, Va., June 4, 1982

Loyalty studied

During the past few days, about 600 NARF employees have volunteered to participate in an Organizational Commitment Survey. This survey is being conducted by Karin Hamel, an Industrial Organizational Psychology instructor at Old Dominion University.

"As a doctoral candidate in industrial organizational psychology," explained Hamel, "I am interested in studying the dynamics of organizational commitment of women and men in a variety of organizational settings."

At the weekly staff meeting, CAPT Billy McClellan, commanding officer, expressed the belief that her work is important and may prove to be helpful in improving the quality of life of NARF employees.

The objective of the survey is to identify factors that contribute to organizational loyalty and commitment among men and women in a variety of different occupations.

Participants in this survey are reminded that all questionnaires are due in the Public Affairs Office by June 8.

APPENDIX C

Supplementary Statistics

- C 1 Factor Analysis - Motivation to Work Scale
- C 2 Factor Analysis - Decentralization Scale
- C 3 Factor Analysis - Formalization Scale
- C 4 Factor Analysis - Job Characteristic Inventory (JCI)
- C 5 Factor Analysis - Job Stress Questionnaire
- C 6 Factor Analysis - Minnesota Satisfaction Questionnaire
- C 7 Factor Analysis - General Mental Health Questionnaire (GHQ)
- C 8 Factor Analysis - Organizational Commitment Questionnaire (OCQ)
- C 9 Factor Analysis - Organizational Commitment Questionnaire (OCQ) by
Mowday et al. (1979); Mowday (1982), Personal
Communication

C 1

Factor Analysis of the Need Satisfaction Questionnaire

(N = 571)

Item	Factor 1
1	0.7608
2	0.7982
3	0.7226
4	0.7083
5	0.4613
6	0.8175
7	0.5768
8	0.8229
% Variance	100.0
Eigenvalue	4.1304

C 2

Factor Analysis of the Decentralization Scale

(N = 571)

Item	Factor 1
1	0.6245
2	0.6808
3	0.5918
4	0.3841
5	0.0299
% Variance	100.0
Eigenvalue	2.3112

C 3

Factor Analysis of the Formalization Scale

(N = 571)

Item	Factor 1	Factor 2
1	-0.1158	0.5216
2	0.4888	-0.2705
3	0.6223	0.0482
4	0.5486	0.3045
5	0.6157	0.0096
6	0.5783	0.0956
7	0.8148	-0.0806
% Variance	83.6	16.4
Eigenvalue	2.3179	0.4560

Factor Analysis of the Job Characteristic Inventory (JCI)

(N = 571)

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
1	.5172	-.1853	.4706	-.0206	.1004	-.0552	-.0071
2	.4887	.2775	.0435	-.0318	-.0987	-.2802	.1338
3	.0446	.4840	.2438	.4138	-.0041	.2002	.2953
4	.5316	.2527	-.1067	-.2146	.0510	.3320	.0005
5	.4705	-.2729	.5777	.0017	.1702	-.0203	.0448
6	.3520	-.0490	-.2159	.1724	.1990	.0033	.0264
7	.4797	-.0709	-.2273	.1967	-.1073	.0472	.1652
8	.0656	.4674	.2642	.4510	.0119	.1797	.2511
9	.3478	.3460	.0145	-.2234	.1585	.2130	-.0192
10	.5317	.2255	.1834	.0092	-.2192	.0495	-.0353
11	.4651	.0184	.1044	.0388	-.4512	.1654	-.1955
12	.5016	-.3300	.6067	-.0573	.1632	.0070	-.0017
13	.4950	.0267	-.0402	.3109	.0649	-.1176	-.0786
14	.6270	-.2347	-.1466	-.1057	-.1100	-.0463	.1362

C 4 Continued

15	.5058	.0841	-.2538	-.2183	.3396	.2037	.0068
16	.6116	-.2324	.4759	-.0475	.1407	-.0038	.0335
17	.6037	-.1630	-.2634	.2942	.0745	-.0403	.0335
18	.6279	-.4259	-.2409	-.2138	-.0980	-.0253	.2727
19	.6877	.0067	-.1423	-.2665	.1549	.2234	.0064
20	.6388	.3765	-.0284	-.1051	-.0367	-.2780	.0442
21	.6154	.0266	.1071	.0540	-.3376	.0851	-.1293
22	.6557	.0019	.1921	.0136	-.0372	.1260	-.0978
23	.5531	-.0334	-.1476	.3738	.1775	-.1097	-.1950
24	.5999	-.1148	-.2417	.3146	.0692	.0144	-.0570
25	.4103	.2520	-.1194	-.0844	.2041	.0040	-.0067
26	.6140	.5085	.0002	-.2211	-.0057	-.4458	-.0135
28	.5153	-.1196	.0246	.0698	.1027	-.0291	-.1062
29	.5996	-.4167	-.1836	-.2322	-.1630	.0073	.2604
30	.5710	.2514	-.1243	-.2260	.0610	.2528	-.1493
31	.4925	-.1375	-.2052	.3688	.2188	-.1275	-.1057
32	.5670	-.0523	-.1542	.2670	-.1670	.0596	.0796
33	.5663	.3451	.0623	-.1999	-.0149	-.2262	.0053
% Variance	53.3	12.5	11.1	9.0	5.9	5.1	3.1
Eigenvalue	9.34	2.19	1.94	1.58	1.03	0.9	0.5

C 5

Factor Analysis Of the Job Stress Questionnaire

(N = 571)

Item	Factor 1	Factor 2	Factor 3
1	.1437	.1923	.2232
2	.2223	.2289	.2176
3	.0999	.0906	.1876
4	.2925	.2712	.2734
5	.1672	.1709	.1466
6	-.1186	-.1262	-.0758
7	-.0520	-.0721	.0343
8	-.2011	-.2433	-.1960
9	.2559	.2705	.2407
10	.4207	.4087	.3110
11	1.000	.7097	.5820
12	.7097	1.000	.6186
13	.5820	.6186	1.000
% Variance	29.7	20.9	8.4
Eigenvalue	3.86	2.73	1.09

C 6

Factor Analysis of the Minnesota Satisfaction Questionnaire (MSQ)

(N = 571)

Item	Factor 1	Factor 2	Factor 3	Factor 4
1	.4987	-.2246	-.1108	.2065
2	.4281	-.1670	-.1634	.0809
3	.5957	-.3316	.0299	.2510
4	.5637	-.1714	.0672	.2784
5	.5930	.5834	.1886	.0012
6	.6282	.5530	-.2102	.1120
7	.5314	.0767	-.1461	-.0444
8	.3421	.1272	.0655	.0544
9	.5557	-.2302	-.0137	.1616
10	.4872	-.1779	.0659	.0724
11	.7125	-.2531	.0739	.0849
12	.6545	.1967	.1033	-.0202
13	.3890	.1581	.5121	-.0626
14	.5008	.1176	.4799	-.0825
15	.7381	-.2042	-.1518	-.3336
16	.6775	-.2722	-.1669	-.3958
17	.5637	.1264	.0868	-.1341
18	.4347	.2171	-.0503	.0524
19	.6550	.1960	-.0367	-.0543
20	.7171	-.1578	.0089	-.0856

C 6 Continued

	Factor 1	Factor 2	Factor 3	Factor 4
% Variance	71.4	14.7	7.9	6.1
Eigenvalue	6.59	1.35	0.7	0.6

C 7

Factor Analysis of the General Health Questionnaire

(N = 571)

Item	Factor 1	Factor 2	Factor 3	Factor 4
1	-.4968	-.0669	-.2552	.2764
2	-.5357	.2136	-.1836	.2770
3	.2648	.4436	-.2854	-.1623
4	.4157	.4930	-.2441	-.1566
5	.5382	.5109	-.2037	-.0897
6	-.4972	.1512	-.1899	.4074
7	-.4501	.2329	-.0443	.1436
8	.1157	.0746	.1315	-.1016
9	-.4485	.2106	.2919	-.0325
10	-.5925	.4059	.2510	-.0429
11	.1238	.1317	.0053	.1292
12	-.4066	.2331	.1777	.0262
13	-.4712	.3139	.3092	-.0474
14	.4856	.0322	-.0549	.1293
15	.6431	.1044	.2268	.2059
16	-.3913	.1956	.1595	-.0409
17	.7269	.1323	.2227	.1779
18	.6414	-.0193	.1133	.2152
19	.6910	.1379	.1401	.3451
20	-.4012	-.0219	-.0029	.0835

C 7 Continued

	Factor 1	Factor 2	Factor 3	Factor 5
% Variance	64.5	16.7	9.9	8.9
Eigenvalue	5.06	1.30	0.77	0.69

C 8

Factor Analysis of the Organizational Commitment Questionnaire (OCQ)

(N = 571)

Item	Factor 1	Factor 2
1	.4985	-.2225
2	.7812	-.2234
3	.4131	.1024
4	.4658	-.0313
5	.6830	-.1674
6	.8440	-.1858
7	.3211	.3190
8	.7322	-.0555
9	.5058	.1957
10	.7100	-.0461
11	.6760	.4095
12	.4812	.2575
13	.5809	-.2255
14	.7998	.0225
15	.6858	.1648
% Variance	90.4	9.6
Eigenvalue	5.96	0.63

Table 5

Factor Analyses - Organizational Commitment Questionnaire (15 Item)

Item	Public Employees (N=569)		Bank Employees (N=411)		Telephone Company Employees (N=600)	
	Factor 1	Factor 2	Factor 1	Factor 2	Factor 1	Factor 2
1		.76	.69		.67	
2	.43	.53	.72	.32	.72	.34
3	.45	.36		.53		.34
4					.39	
5	.40		.67		.66	
6	.50	.49	.75	.32	.75	.35
7	.35			.39		.40
8	.44	.41	.67		.55	.50
9	.60			.58		.54
10	.53	.38	.54	.46	.55	.55
11	.62		.38	.53	.34	.63
12	.45			.50		.37
13		.60	.62	.38	.62	
14	.49	.36	.57	.36	.61	.45
15	.68	.37	.44	.49	.49	.58
% Variance	83.2	9.0	83.6	10.6	92.6	2.4
Eigen Value	6.28	.68	5.99	.76	6.30	.50

C 9 Continued

Table 6

Factor Analyses - Organizational Commitment Questionnaire (9 Item)

Item	Hospital Employees (N=376)	Scientists & Engineers (N=119)		Classified University Employees (N=256)
	Factor 1	Factor 1	Factor 2	Factor 1
1	.66		.78	.77
2	.82	.41	.57	.68
3	.33			.49
4	.68	.55	.45	.86
5	.83	.43	.57	.71
6	.73	.69		.65
7	.77	.66		.76
8	.68		.59	.74
9	.74	.73		.73
E	4.51	3.59	.66	4.61
%	100.0	84.5	15.5	100.0

APPENDIX D**Miscellaneous**

D 1 NNSY Apprenticeship Program

D 2 NARF Organizational Chart

APPRENTICE TRAINING AT THE NORFOLK NAVAL SHIPYARD

Earn while you learn. Enter the Naval Shipyard as an apprentice and in four years you can become a skilled craftsman in one of approximately twenty trades included in the Apprentice Training Program. From craftsman you may advance to even higher level occupations as so many former apprentices have.

WHAT DOES AN APPRENTICE DO?

Works with an experienced mechanic who instructs "on-the-job", how to do, first the simpler tasks in his trade and later the more complex.

Attends the Shipyard Apprentice classes, at shipyard expense, to learn the mathematics, science, language skills, drafting and blueprint reading which are necessary in practicing the selected trade.

WHAT IS AN APPRENTICE PAID?

An apprentice normally works or attends class forty hours per week and receives pay for forty hours at the following rates:

Apprentice (first year)	\$5.44 per hour	5 August 1981
Apprentice (second year)	\$6.17 per hour	
Apprentice (third year)	\$6.91 per hour	
Apprentice (fourth year)	\$7.64 per hour	

Upon satisfactory completion of the four-year term, the apprentice is advanced to the existing rate of journeymen in the selected trade.

HOW DOES ONE BECOME AN APPRENTICE?

Although no special experience or training is required, an applicant must show that they possess the following traits:

- Aptitude and interest for learning trade theory and practice.
- Ability to follow directions in a shop; and,
- Reliability and dependability.

All applicants will be required to take a written test which measures general aptitudes including spelling, following oral directions, and proficiency in mathematics. This test will require approximately 4½ hours. Certain trades in the apprentice program require applicants to show that they have the ability to understand and apply mathematics. The mathematics portion of the written test provides applicants with a means to show that they possess this ability. The notice of rating for applicants who meet the basic requirements and show mathematics ability will be noted "mathematics eligibility." Mathematics eligibility trades indicated by the * below:

IN WHAT TRADES CAN AN APPRENTICE BE TRAINED AT NNSY?

Air Conditioning	*Electrician (High Voltage)	Painter
Equipment Mechanic	*Electronics Mechanic	*Patternmaker
Automotive Mechanic	*Electroplater	Pipefitter
Blacksmith	Equipment Mech. (Machinist Marine)	Rigger
Boatbuilder	Fabric Worker	*Sheetmetal Mechanic
Boiler Plant Equipment Mechanic	Heavy Mobile Equipment Mechanic	Shipfitter
Boilermaker	Insulator	Shipwright
Coppersmith	*Machinist	Wharfbuilder
*Electrical Equipment Repairer	*Machinist (Maintenance)	Welder
*Electrician	*Industrial Electronics Control Mechanic	Woodcrafter
		*Metals Inspector
		Metals Fabricator

NOTE: All trades designated with an asterisk (*) require math eligibility.

PUBLIC WORKS DEPARTMENT

Automotive Mechanic - Shop 02

The apprentice will be taught to overhaul and repair engines, engine accessories, power transmission systems, and other parts of automobiles, gasoline powered trucks, buses, and similar equipment. The apprentice will be trained in the operation and use of such as bench lathes, grinding and seating equipment, clutch and gear puller tools, as well as test equipment such as oscilloscopes, compression gauges, special feeler and dial gauges. Work covers the overhaul of front-and-rear end assemblies, power steering, braking mechanisms and air conditioning, electrical, and hydraulic systems.

Boilermaker - Shop 03

The apprentice entering this trade will be taught to install, renew, repair, and test any and all parts of pressure vessels such as boilers, heat exchangers, condensers, oil and water tanks, and inter and after coolers. He will learn to manufacture and install diesel engine exhaust piping, mufflers and silencers, engine and fireroom floors, ladders and gratings.

*Electrician - Shop 02

The apprentice entering this trade will be taught to install, maintain and repair electrical motors, wiring, and light and heavy electrical machinery on weight handling, material handling, and construction equipment. He will learn to install and repair transformers, convertors, generators, switches, curcuit breakers, rheostats, and similar devices. He will also learn to disassemble electrical equipment, trace circuits, locate defects, clean and replace parts, and renew wiring.

*Electrician - Shop 07

The apprentice entering this trade will be taught to install, maintain, and repair electrical wiring distribution systems, electrical controls, electrically operated equipment or instruments, and light and heavy machinery. He will learn to maintain and repair circuits associated with building electrical wiring, panels, switchboards, intercom systems and fire alarm systems.

*Electrician (High Voltage) - Shop 03

The apprentice entering this trade will be taught to control and

operate electrical power generating and distributing equipment. He will learn to operate and perform preventive maintenance on steam driven electric generators, electric driven air compressors, stationary and rotating substations, electrically driven watering and dewatering equipment, emergency generators, all electric motors, and test instruments.

Heavy Mobile Equipment Mechanic - Shop 02

The apprentice entering this trade will be taught to overhaul and repair various types of heavy duty mobile equipment, such as bulldozers, cranes, locomotives, tractors, graders, and power shovels. He will learn to disassemble diesel or gasoline engines as necessary and inspect, repair, or replace such parts as injection valves, cylinder heads and sleeves, pistons, rings, connecting rods, bearings, gaskets, and crankshafts.

Insulator - Shop 07

The apprentice will be trained to insulate surfaces of pipes, ducts, valves, fittings, boilers, turbines, refrigerator units and similar structures. This includes shaving or shearing sections of insulation in place with wire, metal straps, or special tie lines. The apprentice will also be trained to fabricate molded sections of insulation for special parts by cutting various segments of insulation, fitting parts together, and cementing them.

Boilerplant Equipment Mechanic - Shop 03

The apprentice entering this trade will be taught to maintain, overhaul, repair and install boilers and their auxiliary equipment such as fans, feed water pumps, oil burners, heat exchangers, air preheaters, and controls. He will also learn to overhaul drydock equipment including large pumping equipment, valves, caissons, and capstans, and to repair and maintain turbogenerators and air compressors.

Pipefitter - Shop 07

The apprentice entering this trade will be taught to lay out, cut, bend, assemble and install pipefittings and fixtures and to construct and maintain piping systems such as heating, steam power, hot water heating, hydraulic, high pressure air and oil line systems. He will also learn to locate leaks or obstructions and repair them and test various piping systems to determine conformance to standards.

Rigger - Shop 02

The apprentice in this trade is trained to select and attach hoisting and pulling gear for lifting, moving, and positioning heavy machines, items or equipment, large structural parts and other heavy loads. He

will learn to estimate weight and center gravity, plan weight distribution and maneuver loadings. He will learn to direct operators of cranes, and other weight handling equipment by standard signals, and to devise means of moving and controlling the movement of heavy equipment through narrow openings and in confined spaces. He will also be taught to hang scaffolds and staging for other trades.

*Sheet Metal Mechanic - Shop 07

The apprentice will be taught to lay out, fabricate, and install such things as round and square ducts for air conditioning and ventilation systems; chain link fencing, angle iron used on enclosures and for partitions in storage areas; electrical switch panels and boxes; and will be taught to assemble and repair metal clothes lockers, desks, chairs, doors, steel windows, and blowers and fans. This work is performed in conjunction with the maintenance of the buildings and facilities of the shipyard.

Welder - Shop 07

The apprentice will be trained in various welding processes such as oxyacetylene welding, coated electrode arc welding, inert gas arc welding, submerged arc welding, spot welding and stud welding. The apprentice will be trained to weld in a flat, vertical, and overhead position, on structures such as sheet metal, pipes, boilers and pressure vessels, plates and machinery. The apprentice will be trained to lay out work from sketches, to select the most effective welding sequence, and to set up welding equipment. The apprentice will also be trained to operate gas cutting or electric arc cutting machinery.

Wharfbuilder - Shop 07

The apprentice entering this trade will be taught to construct, maintain, and repair piers, wharves, moorings, gangways, and similar docking facilities involving heavy timber construction work and driving of piles. He will also learn to use winches, hoists, block and tackles, and rollers to move, position, and hold heavy timbers.

Woodcraftsman - Shop 07

The apprentice will be trained to lay out, construct, and install such wood items as windows, doors, partitions, rafters, wooden staging, platforms, floors, and wooden forms for concrete. In addition, the apprentice will be trained in the repairing of furniture, cabinets, and the prefabrication of many structures such as arches, hardwood paneling, display cases, and circular counters. This work involves the shaping and joining of matched grain woods, the molding, and laminating of materials. The apprentice will be trained in the operating and use of wood working machinery such as hand saws, jig saws, planers, jointers, molders and sanders.

PRODUCTION DEPARTMENT

Air Conditioning Equipment Mechanic - Shop 56

The apprentice entering this trade will be trained to overhaul and repair various air conditioning and refrigeration compressors found aboard ship. They will be trained in retubing condensers, water chillers and oil coolers and on the repair of various valves such as: water regulating, thermal expansion and diaphragm valves. They will assist in the shipboard installation of chilled water air conditioning systems ranging in capacity to several hundred tons. The apprentice will operate and test various shipboard air conditioning and refrigeration systems, air dehydrators and galley equipment such as: ice machines, soft drink dispensers and refrigerators.

Air Conditioning and Refrigeration - Shop 99

The apprentice entering this trade will be taught to install, maintain, and repair refrigeration and air conditioning systems ranging in size from 3 1/2 to 75 tons air conditioning units. Other types of units used are 5 ton to 220 ton chill water units, 100 cubic feet chill and freeze boxes, water coolers, dehumidifiers, and heaters. He will be taught the fundamentals of refrigeration, refrigerant controls, refrigerants and their properties, heat loads and other aspects of air conditioning and refrigeration. He will also install temporary ventilation ducts to ships, buildings and submarines using insulated ducts ranging in size from 4" to 16".

Blacksmith - Shop 11

The apprentice entering this trade will be taught to lay out metal to be forged using blueprints, sample parts, templates, sketches or verbal instructions. He is taught to select the proper metal and cut it to size by sawing, shearing or hacking. He is taught to work with the furnace crew in bringing metal to appropriate forging temperature. Using tongs and other instruments, he is taught to manipulate the forged metal using power presses, hammer and various forging tools to produce required dimensions and contours.

Boilermaker - Shop 41

The apprentice boilermaker will be taught to modify, fabricate, repair, assemble, install, rip out, and test condensers, high pressure boilers, and associated components in stationary power plants and on ships. They will learn to devise and calculate patterns for items such as main propulsion plants, auxiliary and heating boilers, steam generators and tanks. Apprentice boilermakers work from blueprints, specifications,

mold loft templates and job orders to layout parts to be fabricated from heavy metal. When necessary they make forms, jigs and templates. Work is performed within the shop and aboard ships.

Coppersmith - Shop 56

The apprentice entering this trade will be taught to lay out pipe sections and fabricate special pipe fittings from sheet copper, brass, copper nickel and other metals and alloys. He will learn to cut, bend, and shape pipe sections using shop machine for both hot and cold forming methods.

*Electrician - Shop 51

The apprentice entering this trade is taught to disassemble electrical equipment, trace circuits and locate defects, and renew wiring, brushes, electrical connections and insulating parts. He will be taught to lay safety devices, transformers, and recording instruments on switchboards and panels. He will also learn, in connection with ship repair and overhaul, to install and repair electrical cable and wiring systems for ship's power, light, communications and control circuits. He will be taught to run power supply circuits to radio, radar, sonar and gyro equipment and to test and inspect generators, motors, ship's control equipment and manual-to-dial telephone systems. He will learn to install switches, circuit breakers, regulators, meters, relays and similar items.

*Electrician - Shop 99

The apprentice entering this trade will be taught to compute electrical load and lighting requirements for overhaul work and to plan, install and operate power distribution and lighting equipment sufficient to meet these requirements. He will be taught to install and maintain shore power to ships, including general purpose 440 VAC power and special application power systems including DC power, 400 HZ and 4160 VAC power. He will learn to disassemble, test, troubleshoot, repair and assemble generating equipment, power distribution equipment, including transformers, rectifiers, circuit breakers, switches, fuses, mechanical connectors and cable. He will learn to install, troubleshoot and repair timekeeping systems, telephone and intercom equipment, alarm systems, announcing systems and closed circuit television surveillance equipment.

*Electronics Mechanic (Maintenance) - Shop 06

An electronics mechanic (maintenance) performs a wide variety of nonspecialized work maintaining and repairing shipyard industrial equipment which uses electronic control circuitry. Included are milling machines, lathes, welding machines (fixed spot welders as well as portable arc welders), magnetic particle inspection machines and

automatic sandblasting equipment. This may encompass circuits utilizing mechanical switches or digital logic components in computer controlled machinery. (Numerical Control Equipment); etc. Ordinary electrical hand tools are used in the trade. Test equipment such as multi-meters, logic probes, oscilloscopes and electronic counters is used as required. A strong mathematics/physics background and a high mechanical aptitude are desired in persons applying for this trade.

*Electronics Mechanic - Shop 67

The apprentice in this trade will be taught to solder, make up plugs and connectors, find and change faulty electrical and electronic components, read various kinds of prints, and to understand and apply basic, intermediate, and advanced electronic theory. He will assist mechanics and system mechanics in the ripout, installation, hookup, repair, and checkout of electronic and fire control systems and equipment including, but not limited to antennas, radars, missile launchers, sonars, electronic counter measures, inertial navigation systems, gyro compasses, communications, weapons directions equipment, nuclear reactor instrumentation and controls, and antisubmarine warfare equipment, and advance to leading these jobs himself. Some trade requirements are the ability to climb tall ships masts, to lift and carry heavy equipment, to install large and complex cabling systems, to readily discern electrical color codes, to work in confined spaces, to work around lethal voltages, and to work in highly classified security areas.

*Electrical Equipment Repairer - Shop 06

Electrical Equipment Repairers test, troubleshoot, repair and overhaul a variety of electrical devices including control circuits for the electrical equipment throughout the shipyard. They use test equipment such as multi-meters and amp-probes. They refer to electrical schematics, diagrams, and blueprints in performing their daily work. They will have a basic knowledge of electrical and electronic theory. The work they perform will be in accordance with the standards set forth by the National Electric Code. They receive assignments from their foreman and are expected to complete the assignment with a minimum of supervision. A strong mathematics/physics background is desired. Trade theory classes will include electrical and electronic theory, motors and generators, industrial equipment, and advance electricity and electronics.

Electroplater - Shop 56

The apprentice entering this trade will be trained in the procedures for preparing material to be electro-plated such as grinding, use of acid and caustic cleaning solutions and the masking of areas not to be

plated. He/she will receive training in basic electrical theory, the mixing of plating solutions, and specialized operations including anodizing and engraving. Apprentice will be trained in the properties and uses of electro-deposited metals such as gold, silver, platinum, cadmium, copper and zinc and will become familiar with the operation, adjustment and maintenance of the electro-plating equipment.

*Machinist - Shops 06 & 31

The apprentice entering this trade will be taught to set up and operate various machine tools including various types and sizes of lathes, boring mills, shapers, planners precision grinding machines, and specialized or multi-purposes machines related to these. He will learn how to manufacture parts and items of equipment from raw stock of different kinds of metals, metal alloys, and other materials. He will learn to perform work involved in the manufacture of castings, forgings, weldments, and other fabrications through the use of machine tools and precision measuring instruments as calipers, verniers, and micrometers.

Equipment Mechanic - Shop 38

The apprentice entering this trade will be taught installation, removal, alignment and repair of ship's main propulsion machinery, auxiliary engines, ordnance machinery, and such other ship's machinery as elevators, catapults, cranes, pumps, fire fighting equipment. Work assignments will include but not to be limited to submarines, surface ships, shop work, diesel engine repair, and small boat mechanical work. He will learn to perform on-site machining of parts and equipment utilizing tools such as boring bars, portable milling machines, drilling machines, and precision measuring instruments such as calipers, verniers, and micrometers.

Molder - Shop 31

The apprentice entering this trade will be taught to construct sand molds by various machine methods for use in making metal, malleable iron and steel castings. The skills training will include the assembling of patterns and components parts and preparing molds by packing or ramming suitable materials, such as sand or loam; around the pattern. He will learn how to pour or to direct the pouring of molten metal into mold, using knowledge of heat of metals to determine when to pour and speed of pouring.

Painter - Shop 71

The apprentice entering this trade will be taught how to prepare wood and metal surfaces for painting, also metal parts, equipment, interiors and exteriors of buildings, surfaces of vessels, and other structures using brushes, spray guns and other means of application. He will be

taught how to mix paints, base materials, thinners and pigments to learn how to set up and adjust spray equipment or other power painting equipment, including air compressors.

Insulator - Shop 56

The apprentice entering this trade will be taught the insulation of pipes, valves, ducts, fittings, boilers, tanks and similar structures using materials such as cork and fiberglass. He will learn to saw and cut insulation to fit structures, secure and cement it in place and to cover with appropriate fabric, and sew joints and seams. He will be taught to fabricate molded section of insulation for special parts by cutting various segments of insulation with mitre box, fitting different parts together and cementing them.

Pipefitter - Shop 56

The apprentice entering this trade will be taught to lay out piping systems and sections aboard ship and plan their assembly in relation to walls, obstructions, location of machinery and similar consideration. He will learn to cut, bend, thread, and assemble pipe fittings, to make various kinds of pressure tight joints, to bore holes necessary to permit passage of pipe and to install piping and supporting fixtures. He will also have to secure and connect to piping systems various fixtures such as radiators, laundry and galley equipment, pumps and tanks.

Pipefitter - Shop 99

The pipefitter apprentice will learn to fabricate and repair piping system components. Learn to select the proper types of valves and fluid system control devices by their applications and characteristics. He will learn to disassemble, inspect, repair and test various types of valves; e.g. gate globe, pressure reducing, check butterfly. He will be taught to measure, cut, thread, bend, soft solder, silver solder and braze pipe. Operate shop equipment such as pipe cutter, threader, drill press, grinder, abrasive saw, power hack saw, hydrostatic test equipment, banding machine. He will learn to install, maintain, test all types of portable hoses for temporary service air, water, steam for ships and other shipyard crafts. The apprentice will learn to apply sanitary and health regulations pertaining to potable water, sewage disposal and waste water systems.

Rigger - Shop 72

The apprentice in this trade is trained to select and attach hoisting and pulling gear for lifting, moving and positioning heavy machines, items of equipment, large structural parts and other heavy loads. He will learn to estimate weight and center gravity, plan weight distribution and other weight handling equipment by standard signals,

and to devise means of moving and controlling the movement of heavy equipment through narrow openings and in confined spaces. He will also learn to install and repair rigging on ships, such as small boat handling gear and arresting gear and acquiring the skills necessary to rig and hang scaffolds and stagings for use of various trades.

Fabric Worker - Shop 72

The apprentice entering this trade will be taught to lay out and cut canvas and other material in order to fabricate awnings, sails, boat canopies, weather and protective cloths and covers of all types for use on decks, machinery, instruments and accessories. He will learn to work from blueprints and specifications or work sketches in order to lay out drawings and material. He will learn to assemble sections, form hems and fold and sew sections in order to resist wear at support points. He will also work in grommets, metal fittings and fasteners.

*Sheetmetal - Shops 17 & 99

Apprentices entering this trade will be taught to shear, notch and punch, drill, form and otherwise shape sheetmetal, using shears, rolls, saws, forming machines and other metal fabricating machines. The trainees learn to lay out the work from blueprints, sketches, and work orders employing geometry and trigonometry to lay out flat forms which will form required three dimensional shapes. Trainees will learn to join parts by riveting, bolting, screwing, spotwelding, soldering, and various seams. Trainees will also learn to assemble, modify and/or install sheet metal products such as: heating, air condition, ventilation systems, file cabinets, desks, tables, and galley equipment, bulkheads, and false ceilings.

Shipfitter - Shop 11

Shipfitter mechanics develop, lay out, fit, bolt, assemble, and erect ferrous, nonferrous, exotic metal and plastic plate. They shape pipe when used to form a part of a structural assembly in connection with ship construction, alteration, and repair. They manufacture and install interior and exterior items such as: bulwarks, catapult structures, coamings, doors, foundations, gratings, hatches, hawse pipes, jack rods, ladders, magazines, masts, kingposts, racks, railings, sea chests, stanchions, stowages, tanks, trunks, yardarms, and hull zincs. They repair and/or replace damaged ship structures and fittings. They prepare surfaces for welding, burning, or riveting. The work is accomplished using miscellaneous hand, electric, or pneumatic tools and precision tools such as: micrometers, depth gauges, calipers, and transits for close tolerance work.

Shipwright - Shop 64

The apprentice entering this trade will be taught to build supporting

cradles for drydocking vessels. He will learn to position, build up, and secure keel blocks, bilge blocks, and other structures upon which the vessel will rest. He will also learn to position blocks and other structures in relationship to frame lines so that weight of ship will be evenly supported and distributed. He will learn to construct staging for ship work and build temporary wood supports and shoring.

Welder - Shop 26

The apprentice welder performs welding tasks, upon certification, in all current processes, (shielded metal-arc, gas metal-arc, oxyacetylene, gas tungsten-arc) on various metal alloys (carbons steels, high yield steels, stainless steels, aluminum, copper, and nickel) generally under the guidance of a journeyman welder or instructor. Job training assignments will involve tasks on the waterfront and the shop sites both indoors and outside.

Woodcraftsman - Shop 64

The apprentice entering this trade will be taught to assemble, fit, install, and repair wooden bulkheads, doors, paneling, berths, and ladders. He will learn to make tables, desks, chairs, cabinets, and other items of wooden furniture. He will also install fiberglass plastic, formica, and other types of thermal and accustic insulation. He will learn to operate various types of woodworking machinery and hand and power tools.

Boatbuilder - Shop 64

The apprentice will learn to construct, modify, repair, and outfit wood and plastic boats (except tug boats and barges) up to 100 feet in length, and to manufacture, repair, and modify all plastic components for boats and shipboard systems. He will learn to develop molds for manufacturing new components; to fabricate canopies, rudders, and battery boxes, to mill components such as stems, keels, and engine foundations. He will also be taught to construct suitable jigs and fixtures from lofted molds and to assemble component parts of a boat, to repair, overhaul, and salvage deteriorated or damaged components, to insure that boats are watertight, to install and assist in installing components such as engines, rudders, steering systems, and electrical equipment, and to furnish wood surfaces.

Organization

