

A FORMULATION AND TEST OF A MULTIVARIATE
PREDICTIVE MODEL OF PROFESSIONAL JOB SATISFACTION

by

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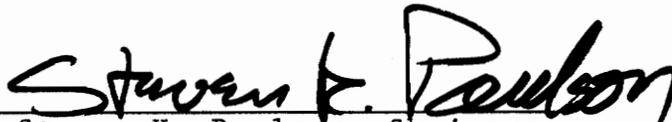
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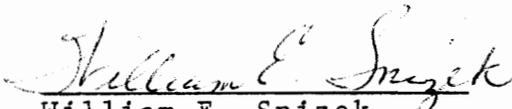
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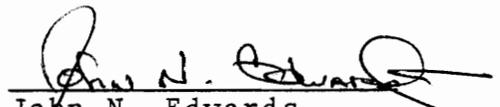
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During the decade of the 1960's many Washington backed social workers invaded northern West Virginia. No hollow or mining town escaped their well-planned assault. I had the misfortune of being a high school drop-out in one of their target cities. No aspect of our lives could escape the scrutiny of those middle class warriors. Sexual habits, leisure habits, eating habits, sleeping habits, in fact, all our habits became objects of manipulation.

The social workers, or do-gooders as we called them, met us on our own turf. I recall a lecture on education as I stood supporting a fire plug. I was told that education was the key to happiness, security, and the good life. As a drop-out, I was an easy target for such propaganda. I now wonder how I could have ever believed such nonsense. I must have been a gullible teenager.

I will not attribute my education on those misguided liberals of the 1960's. To do so would be an act of bad faith. I alone made the decision to pursue a Ph.D in Sociology. Sometimes it was difficult but never was it easy. Since I did make the decision, I owe thanks to those who helped me.

First, I would like to thank my dissertation advisor, Dr. Steven K. Paulson. He was always available when I needed him for advice. Sometimes he confused me. Sometimes I confused him but we always seemed to work matters

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The past three years have not been easy. In fact at times they were damn difficult. The trying years of doctoral study are now over. I look forward to a life of research and teaching. The tasks of gaining tenure and publishing research should be a snap after what I have been through in preparation. But after all isn't that the purpose of turning a graduate student inside out?

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CHAPTER I

A FORMULATION AND TEST OF A MULTIVARIATE PREDICTIVE MODEL OF PROFESSIONAL JOB SATISFACTION

STATEMENT OF THE PROBLEM

The purpose of this dissertation is to test and further develop a multivariate predictive model of professional job satisfaction. In the most general terms this study focuses on the frequently antagonistic relationship between professionals and bureaucracies which in turn effects job satisfaction. The specific profession to be examined is that of fisheries biologists and the bureaucracies employing definitions of such professionals. In this introduction, profession, professionalization, professionalism, and professional group will be presented and the conceptual logic of the study will be outlined.

In brief, the argument is that members of the American Fisheries Society form an established professional group similar to many other professional groups. Thus, a study of the members of this society will provide a basis for generalization to members of other established professional groups. There have been numerous bivariate studies of job satisfaction, but few attempts have been made to estimate the impact of several independent variables on professional job satisfaction. In this study a multivariate predictive model of professional job satisfaction was developed and tested through the analysis of data on

professional fisheries biologists. As such, this study brings together in one design those variables that, on the basis of past research, seem to have the best potential for predicting levels of professional job satisfaction.

The socio-demographic variables to be analyzed are age, education, income, length of service, and residence. Four dimensions of role conflict including person role conflict, intra-sender conflict, inter-sender conflict and role overload will also be analyzed to determine their value in predicting professional job satisfaction. Five dimensions of the concept of perceptions of bureaucracy including technical qualifications, procedures, division of labor, hierarchy, and impersonality will be assessed as to their value in predicting professional job satisfaction. The literature concerning the relationships between each of these variables and job satisfaction will be discussed in Chapter II.

PROFESSION AND RELATED CONCEPTS

The present study follows the definitions of profession, professionalization, professionalism, and professional groups offered by Vollmer and Mills (1966: VII-VIII). They state:

We suggest, therefore, that the concept of "profession" be applied only to an abstract model of occupational organization, and that the concept of "professionalization" be used to refer to the dynamic process whereby many occupations can be observed to change certain crucial characteristics in the

direction of a "profession," even though some of these may not move very far in this direction. . . we would prefer to use "professionalism to refer to an ideology and associated activities that can be found in many and diverse occupational groups where members aspire to professional status. Professionalism as an ideology may induce members of many occupational groups to strive to become professional, but at the same time we can see that many occupational groups that express the ideology of professionalism in reality may not be very advanced in regard to professionalization. Professionalism may be a necessary constituent of professionalization, but professionalism is not a sufficient cause for the entire professionalization process.

Finally, we suggest that "professional groups" be used to refer to associations of colleagues in an occupational context where we observe that a relatively high degree of professionalization has taken place.

The definitions for each of these concepts will now be discussed in more detail.

PROFESSION

One early definition of profession was provided by A.M. Carr-Saunders (1933:4) he stated:

A profession is defined as an occupation based on specialized intellectual study and training, the purpose of which is to supply skilled service or advice to others for a definite fee or salary.

This definition is rather superficial and differs from more recent definitions. In a more detailed manner Greenwood (1957) has defined a professional by five attributes, including 1) the presence of systematic theory

based on research, 2) authority, 3) formal and informal community sanctions, 4) code of ethics defining appropriate behavior and 5) a professional culture defining training and professional practice. These characteristics of profession are distinctly structural as opposed to attitudinal.

One example of an attitudinal approach to defining profession is found in Gross (1958:77-82). He offers three social-psychological characteristics of professions and two general structural characteristics as follows:

1. The professions are characterized by a high degree of personality involvement.
2. The professional has a well developed sense of obligation to his art.
3. The professional identifies with colleagues through formal and informal professional associations.
4. The professional works with an unstandardized product.
5. The service provided by the professional is essential to the health and welfare of the individual and of society.

A somewhat different definition was offered by Parsons (1959:547)

I conceive of a profession to be a category of occupational role which is organized about the mastery of and fiduciary responsibility for any important segment of a society's cultural tradition, including responsibility for its perpetuation and for its future development. In addition, a profession may have responsibility for the application of its knowledge in practical situations.

Goode (1960:902-914) has conceptualized a profession

as a community within a community. The term community is used by virtue of the following characteristics:

1. Its members are bound by a sense of identity.
2. Once in it, few leave, so that it is a terminal or continual status for the most part.
3. Its members share values in common.
4. Its role definitions vis-a-vis both members and non-members are agreed upon and are the same for all members.
5. Within the areas of communal action there is a common language which is understood only partially by outsiders.
6. The community has power over its members.
7. Its limits are reasonably clear, though they are not physical and geographical, but social.
8. Though it does not produce the next generation biologically, it does so socially through its control over the selection of professional trainees, and through its training processes it sends these recruits through an adult socialization process.

The concept of profession is not without critics.

For example Hughes (1958) has suggested that the concept be abandoned as no more than a claim to status with prestige connotations.

Habenstein (1963:299-300) has argued that sociological research directed toward defining profession distracts sociologists from studying more important issues. The following statement paraphrases his argument:

Profession does not have the stature of a sociological category, that is a concept with analytic power. The debate and lack of conceptual clarity hinders the "real task" of

sociology as the study of human beings in association. The strains, stresses, crisis, unsatisfied human needs, vulnerability and grief cannot be handled, controlled or regulated so long as sociologists persist in seeking the definitive definition of profession. This activity distracts us from some of the necessary functions that must be performed in modern society - i.e., the conscious identification and handling of human emotional needs in the face of recurrent crises situations.

Elliot (1972:2-4) agrees with Hughes and Habenstein that profession can be analyzed as a symbol, but adds that profession may also be used as an analytical device in the sociological study of work and occupations. In this regard he states:

The name 'profession' is widely and imprecisely applied to a variety of occupations. The adjective 'professional' is even more overworked, extending, for example, to cover the opposite of amateur and the opposite of a botched job, two concepts which need not be synonymous. One of the tasks of the sociologist is to develop concepts and categories which will assist in explanation of the organization of society and the behavior of people within it. One source of such categories are the classifications already in use in everyday life, but the task of classification cannot end there. Indeed, starting from that point may lead to an endless process of verbal juggling to make the category, and the phenomenon, fit for both scientific and everyday purposes.

This study closely follows the structural definition of Greenwood (1957). As previously noted, the five structural characteristics are: 1) The presence of systematic theory based on research. 2) Authority. 3) Formal and informal community sanctions. 4) A code of ethics defining appro-

priate behavior. 5) Professional culture defining training and professional practice.

Hall (1968) argues that a combination of structure and attitude serves as a basis for the professional model. This study follows Ritzer (1977) in treating structure and attitude separately and follows a structural definition of profession.

Concerning other definitions of profession reviewed here, Engel and Hall (1971:75) have stated:

Traditional definitions of the professions posed by students of occupations are strikingly similar in content with differences based primarily on emphasis rather than being actual contradictions.

PROFESSIONALIZATION

Further clarity of the concept of profession is to be gained from a consideration of the concept of professionalization. This sequence is as follows: 1) An obvious first step is to start doing full time the thing that needs doing. Wilensky notes that at this early stage of professionalization, the practitioners come, of necessity, from other occupations.

2) A training school is established. In this regard Wilensky (P:144) states: "If these training schools do not begin within universities, as they do in the case of hospital administration, city planning, and accounting, they always eventually seek contact with universities, and there is a steady development of standard terms of study,

academic degrees, and research programs to expand the base of knowledge.

3) A professional association is formed. In describing the emergence of such associations, Wilensky (P:144) states: "activists in the association engage in much soul-searching - on whether the occupation is a profession, what the professional tasks are, how to raise the quality of the recruits, and so on. . ."

4) The association engages in political agitation to win the support of law for the protection of the group. Again, quoting from Wilensky: (P:145) "where the area of competence is not clearly exclusive, legal protection of the title will be the aim (certified psychologist, registered engineer); where definition of the area of competence is clearer, then mere performance licensing and certification as weapons in the battle for professional authority are the least important of these events."

5) A code of ethics is developed. Concerning this final stage of the professionalization process, Wilensky (P:145) states: "eventually rules to eliminate the unqualified and unscrupulous, rules to reduce internal competition, and rules to protect clients and emphasizing the service ideal will be embodied in a formal code of ethics." It is at this point that a professional group is fully developed.

In summarizing this process Wilensky (P:145-146)

states:

In sum, there is a typical process by which the established professions have arrived: men begin doing the work full time and stake out a jurisdiction; the early masters of the technique or adherents of the movement become concerned about standards of training and practice and set up a training school, which, if not lodged in universities at the outset, makes academic connection within two or three decades; the teachers and activists then achieve success in promoting more effective organization, first local, then national - through either the transformation of an existing occupational association or the creation of a new one. Toward the end, legal protection of the monopoly of skill appears; at the end, a formal code of ethics is adopted.

The sequential development of 18 occupations examined by Wilensky supports the empirical validity of these five stages of professionalization. The data yielded a four-fold classification of occupations. Established professions include accounting, architecture, civil engineering, dentistry, law, and medicine. Such occupations as correctional work, veterinary medicine, and social work are considered professions in process. School teaching, nursing, pharmacy, and librarianship are marginal professions. Such occupations as public relations, advertising, and funeral directing are considered professional by those in the occupation, but do not meet the standards of profession as defined by Wilensky. Wilensky's research outlines a dynamic process whereby many occupations can be observed

to change certain crucial characteristics in the direction of a profession and is thus compatible with Vollmer and Mills (1966) formulation. Caplow (1964) has outlined a similar sequence of professionalization. As with definitions of profession, the difference between these formulations is a matter of emphasis rather than contradiction. Hall (1968:277) has commented on Caplow's sequence of professionalization by stating:

Theodore Caplow uses a slightly altered formulation in his "sequential steps in professionalization." Both Wilensky and Caplow include the same general variables, with Wilensky's appearing to be more descriptively accurate.

PROFESSIONALS IN BUREAUCRACIES

A point of concensus in the literature on professions is that the independent professional acting as his own master has disappeared through the growing bureaucratization of work, that is, services are supplied by professionals through the restraining bureaucratic structures of modern society. The bureaucratization of professionals has had identifiable consequences for both the individual and employing organizations. This study focuses on consequences for individuals in terms of job satisfaction.

The problems associated with professionals in bureaucracies have been extensively studied by students of work and occupations. G. Harries-Jenkins (1970:53) has noted:

No longer can it be assumed that the "ideal-type" professional, if such a man ever existed, is the independent free practitioner who practices his calling in a purely entrepreneurial role. The professional of today is a salaried employee.

He (P:54) further notes that:

In the majority of cases, the individual in these bureaucracies, retains a distinctive frame of reference, so that as a professional, he participates in two distinct, irreconcilable systems. He is a member of two institutions - the profession and the organization. Each of these attempt to control his occupational activities, and the manner in which the former establishes standards and norms for the conduct of professional activities, contrasts with the way in which the latter specifies task objectives, and controls the means whereby these objectives are realized.

A specific outline of the problem areas relevant to professionals in bureaucracies has been suggested by Scott (1966:265). These areas include professional resistance to bureaucratic rules, professional rejection of bureaucratic standards, professional resistance of bureaucratic supervision and the professional holding conditional loyalty to the bureaucracy. These areas of conflict suggest that professionals must somehow adapt to the work in a bureaucratized setting.

Reissman (1949) developed a typology that considered the orientations of professionals and bureaucrats as being at the opposite ends of a continuum. Through the analysis of data on 40 mid-level civil service workers, four types

of bureaucrats were delineated. The first of these was the functional bureaucrat defined as the professional who sought recognition from outside groups. The specialist bureaucrat showed identification and loyalty in the organization. The service bureaucrat showed identification with the organization but still sought outside identification. Finally, the job bureaucrat was completely orientated toward the organization. One conclusion of this study was that those who were professionally orientated viewed their position as a temporary place used to pursue their professional interests.

Gouldner (1957) outlined two types of professional role orientations. The cosmopolitan type resembles Reissman's functional bureaucrat while the local professional resembles the job bureaucrat. Cosmopolitans, unlike locals, are less likely to accept organizational rules and demands.

Blau and Scott (1962) found that social workers with a strong professional orientation were more likely to violate organizational rules in order to provide better client service. The violation of organizational rules among professional nurses has been discussed by Corwin (1961). This study showed that among professional nurses trained in hospitals there is less of a tendency to question hospital rules and regulation. There is a decline in pro-

professional allegiance after graduation. By contrast, professional nurses trained in non-hospital collegiate programs maintain a cosmopolitan orientation toward their work.

Professionals, by definition, have endured a long period of training and preparation. This alone implies a degree of dedication and a desire to practice in the field. Few, if any, professions have escaped the limitations and restraints inherent in the bureaucratization of professional work. This is probably disappointing to many professionals. This disappointment is reflected in perceptions of job satisfaction.

The process of professional adaption or resistance to bureaucratic requirements may result in withdrawal, coping while attempting to maintain a professional orientation, or developing loyalty to the bureaucracy rather than to the profession.

PROFESSIONALS AND JOB SATISFACTION

When bureaucratic requirements are pitted against professional orientations there are consequences for professional job satisfaction. Vroom (1964:99) has offered the following definition of job satisfaction:

Job satisfaction is the positive orientation of an individual toward the work role which he is presently occupying - which can be restated as an individual liking more aspects of the job than he dislikes.

Several studies have considered the consequences of differential levels of job satisfaction. Coch and French (1948) found that workers are more prone to accept organizational change when job satisfaction is high. Goulder (1954) later documented this finding in his classic study of the gypsum plant. In a study of welfare agencies, Hage and Aiken (1967) again found that high job satisfaction was conducive to program change. They argue that "our findings suggest that job satisfaction is a necessary precondition for the introduction of change." Crozier, (1964) through the study of a French government bureaucracy, has discussed the relationship between job satisfaction and program change and found that low satisfaction stifles program change.

Bureaucracy is the principle means of social organization in modern society and professionals are central to the planning, developing, and functioning of social policy. Thus, professional job satisfaction, as manifested in bureaucratic settings, is an important element in social and organizational change.

THE AMERICAN FISHERIES SOCIETY

The following discussion will demonstrate that the American Fisheries Society has developed according to the sequence outlined by Wilensky (1964).

Much of the development of the professional bureaucratic organization concerned with the management and conservation of water and fish resources emerged in the United States in 1870. In that year an interest group was formed and became known as the American Fish Culturalists' Association. The five founders of this association pressured Congress to create the Commission on Fish and Fisheries and accomplished this goal in 1871. In 1886 the organization became known as the American Fisheries Society and has maintained that name to the present. With only 204 members by 1900, it is evident that the Society grew slowly. However, this slow growth apparently did not hinder organizational efforts to alert the federal government and the general public to problems of American waters and fish populations. Transactions, the journal of the Society, remains instrumental in raising issues and providing technical information for governmental and private agencies and thus to the concerned American public.

Professional educational efforts among fisheries biologists began through the mode of apprenticeship. Carlander (1970:57) has cited the year 1919 as a decisive turning point in professional fisheries education. He states:

At the October, 1919 meeting, (the) committee on university in fish culture reported: "It is the consensus of

opinion that a well equipped university, by a properly selected course of study, may give everything necessary for the student of fish culture except the practical work. General Biology, Zoology, Botany, Physics, Chemistry, etc."

In that same year, through pressure from the American Fisheries Society, the University of Washington established a school of fisheries and Cornell University established courses in fisheries and game propagation. Several universities and colleges followed with fisheries programs such as, Harvard, Columbia, Western Reserve, and the Universities of Hawaii, Illinois, Maryland, Michigan, Missouri and Wisconsin and several others. The point is that since the committee resolution in October 1919, fisheries programs have developed on a large scale.

The American Fisheries Society has been responsible for the introduction of many water and fish related resolutions that became law. These recommendations have contributed much to the expansion of the bureaucratic structure involved in all aspects of American water and fish resources. For example, the Society was instrumental in pressuring the federal government to set aside aquatic preserves (1912). As noted, it was influential in the development and upgrading of fisheries education in American colleges and universities. The passage of the Dingwell-Johnson Act (1950), the Saltonstall-Kennedy Act (1954)

and the Anadromous Fish Act (1965) may be partially attributed to the concerns of the Society. According to Benson (1970), the Society was directly responsible for the defeat of the Lapham Bill which was intended as a first step toward the nationalization of American fisheries. The defeat of this bill made it possible for bureaucratic organization to develop on a decentralized state basis. The decentralized and complex character of water and fish resources management has resulted in specialization and diversification of the work roles of fisheries biologists.

The American Fisheries Society has developed a code of ethics. This code has four sections including:

- 1) relations with the public, 2) dignity and well-being of the profession, 3) relations with clients and employers, and, 4) relations with other professionals.

According to Benson (1970:24) "the American Fisheries Society created a new and needed profession where none existed before. The Society helped to compile a body of diverse and specialized literature that constitutes a living record of the art and science of fishery management. The Society enabled fishery workers to unite for the attainment of goals that they could not have reached working singly and without the combined backing of their fellow professionals. The organization has provided a foundation that had greatly influenced development of water and fish resources in the

United States." It is evident that the American Fisheries Society has followed the professionalization process outlined by Wilensky (1964) and is an established profession. Early in this century the initial founders of the Society began doing full time work related to fish and water resources. The training necessary to perpetuate the occupation is now lodged in colleges and universities. The organization gradually became national in scope and a formal code of ethics has been adopted by the Society.

SUMMARY

This chapter has discussed the purpose of this study which is to develop and test a multivariate predictive model of professional job satisfaction. The predictor variables include age, education, income, length of service, residence, role conflict and perceptions of bureaucracy.

Distinctions have been between profession, a work category, professionalization, the dynamic process whereby occupations change their characteristics, professionalism, ideology and associated activities found in diverse occupational groups, and finally professional groups, referring to associations of colleagues in an occupational context.

Several definitions of profession including A.M. Carr-Saunders (1973), Greenwood (1957), Parsons (1959), Goode (1960), and Gross (1958) were outlined.

The purpose of outlining Wilensky's (1969) sequence of professionalization was to show that the American Fisheries Society represents an established profession.

The problems of professionals in bureaucracies were discussed in terms of bureaucratic attempts to control professional work behavior. One identifiable consequence of the process of professional resistance or adaptation to bureaucratic requirements is job satisfaction. The literature on the determinants of job satisfaction are discussed in the next chapter.

CHAPTER II

THE LITERATURE ON THE VARIABLES RELATED TO JOB SATISFACTION

PERCEPTIONS OF BUREAUCRACY AND JOB SATISFACTION

Research on the relationship between bureaucracy and job satisfaction has been focused extensively upon professionals. Among professionals, it appears that an inverse relationship exists between bureaucracy and job satisfaction. Support for this position may be found in Herzberg et al., (1959); Blauner (1964); Sorenson and Sorenson (1974); and Miller (1970). In discussing professional work Sorenson and Sorenson (1974:98) state:

...the profoundest motivation to work comes from the recognition of individual achievement and from the sense of personal growth in responsibility. It is likely that neither of these can flourish in a bureaucratic situation. For the supervisor, the opportunity to exercise personal judgment is negligible. He works within the framework of the system of rules, and since his authority comes from his position rather than from any personal characteristics, he may be likely to stray very rarely from the paths determined by these rules. There can be little sense of achievement, little perception of growth in the exercise of authority bound by the book.

For the subordinate, and in a bureaucracy everyone is a subordinate, the situation is bad. Again the rules, as interpreted by the supervisor as well as by the book, determine not only what is to be done, but how it is to be done. The

exercise of ingenuity and initiative is discouraged. For one thing, it is too disconcerting to everyone to have individuals depart from the usual procedure; there are few rewards for such departures.

The multidimensional nature of bureaucracy is reflected in Hall's (1963) Scale of Perceptions of Bureaucracy. The dimensions will be discussed as to their empirical relationships with job satisfaction.

The Division of Labor

Blauner (1964), Miller (1970), and Snizek et al. (1977) have documented an inverse relationship between division of labor and job satisfaction. This relationship may be viewed as resulting from such factors as boredom, monotony, fatigue that result from a highly specialized division of labor.

Work Procedures

Loosely defined work procedures that maximize worker autonomy contribute to higher levels of job satisfaction. Such a relationship has been suggested by Argyris (1960), McGregor (1960), and Likert (1961). However, Hickson (1966) and Greene and Organ (1973) report that flexible work procedures actually result in lower job satisfaction because of accompanying anomie and Snizek et al. (1977) found no significant relationship between work procedures and job satisfaction.

Impersonality

The findings of Miller (1970), Weber (1947), Parsons (1951), Sills (1957), Blau (1955), and Snizek et al. (1977) suggest an inverse relationship between impersonality and job satisfaction. High levels of impersonality result in isolation of individual workers from others is not conducive to informal cliques that may serve to promote job satisfaction and collegiality.

Hierarchy of Authority

The elaboration of a hierarchy of authority has been found to be inversely related to job satisfaction. Worthy (1950), Miller (1967), Snizek et al. (1977) and Kornhauser (1962) suggest that the development of multiple hierarchial levels results in impersonal employee management relations, a low degree of job freedom, low employee morale, and inhibits the flow of communication. These factors have an impact that results in low job satisfaction. Further support has been offered by March and Simon (1958).

Technical Qualifications

Hall (1963) and Udy (1959) have documented a negative relationship between technical qualifications and the other dimensions of bureaucracy and considered it a rational element of bureaucracy. This dimension is included in the present study because of the expectation that professionals expect hiring and promotion to occur

on the basis of technical qualifications. To the extent that this is practiced, professionals would be expected to derive satisfaction. Snizek et al. (1976, 1977) found support for a positive relationship between technical qualifications and job satisfaction. This dimension is included in the present study for the purpose of further documenting the relationship with the other dimensions of bureaucracy and, of course, with job satisfaction.

ROLE CONFLICT AND JOB SATISFACTION

Following Miles (1975:335), role conflict is defined as "the degree of incongruity or incompatibility of expectations associated with a role." Previous research (Kahn et al., 1964 Rizzo et al., 1970) has followed a similar definition of role conflict.

Several studies (Gross et al., 1958; Miles, 1975; Hamner and Tosi, 1974; and Newcomb et al., 1965) have focused on the relationship between role conflict and job satisfaction and have been consistent in finding an inverse relationship.

The dimensions of the role conflict scale developed by Miles are consistent with the types of role conflict as stated by Katz and Kahn (1966:184-185). They are

as follows:

Intrasender - the expectations from a single member of a role set may be incompatible.

Intersender - the expectations from one sender are in conflict with those from one or more other senders.

Interrole - occurs whenever the sent expectations for one role are in conflict with those for another role played by the same person.

Person-role - occurs when role requirements violate the needs, values, or capacities of the focal person.

Role overload - a kind of intersender conflict in which various role senders may hold quite legitimate expectations that a person perform a wide variety of tasks, all of which are mutually compatible in the abstract. But it may be virtually impossible for the focal person to complete them all within a given time limit.

Following Snizek et al. (1976) and Compton (1976), the interrole dimension is not included in the present study because of previous and consistently low correlations with other dimensions of the scale.

AGE AND JOB SATISFACTION

Herzberg et al. (1957:5-6) reports that:

Twenty-three studies can be cited in this analysis of the change in job attitudes with changing age. An examination of these data showed a remarkably consistent trend. In general, morale is high among young workers. It tends to go down during the first few years of employment. The low point is reached when workers are in their middle and late twenties, or early thirties. After this period job morale climbs steadily with age.

This curvilinear relationship has also been supported by other investigations. Hoppock (1960) found a positive relationship between age and job satisfaction. Smith (1955) reported that younger workers were most susceptible to boredom and workers age 35 years and older were least susceptible. Rosenfield and Owens (1965) found that younger workers were more concerned with intrinsic factors such as advancement, recognition, and work enjoyment. Extrinsic factors, such as working conditions and policies and pay, were less important. These concerns were reversed for older workers.

One possible explanation of increased morale with age is discussed by Gouldner (1975:283). He states that:

The role of 'elders' in a gerontocratic society, with the deference and respect due them by their juniors, is in these terms a manifest role...note however that even in the American factory elders may also receive some special consideration and similar if not equal deference from

their juniors. Here, however, the role of the elder is a latent one.

These empirical findings will provide a baseline from which the results of the present study can be compared.

INCOME AND JOB SATISFACTION

Hoppock (1935); Miller (1940); Katz (1949); Inlow (1951); Morse (1953); Ash (1954) and Hulin and Smith (1965) have found that income is positively correlated with job satisfaction. There is evidence that this relationship remains regardless of job level. Lawler and Porter (1963) also found that income was positively correlated with job satisfaction. This finding was based on a sample of 2000 managers and managerial level was held constant. This relationship has also been supported by Smith and Kendall (1963).

EDUCATION AND JOB SATISFACTION

Herzberg et al. (1957:15-17) reviewed 13 studies concerning the relationship between education and job satisfaction. Three studies are cited in which job satisfaction was found to increase with education: American Vocational Association (1948), Keasler (1954) and Scott and Hayes (1921).

Those studies that found no relationship between education and job satisfaction include Ash (1954), Quayle (1935), Kornhauser and Sharp (1932), and Fryer (1926).

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Centers and Cantril (1946) and Scott and Hayes (1921) have reported an inverse relationship between education and job satisfaction.

More recent literature suggests that job satisfaction increases from low levels among semi-skilled workers to higher levels among professionals. The changes across groups are probably a function of education. (Klein and Maher (1966)) found support for a negative relationship between education and job satisfaction while holding occupational levels constant. The present study should provide further evidence in this area.

LENGTH OF SERVICE AND JOB SATISFACTION

It is evident from the literature that the relationship between length of service and job satisfaction parallels that of age and job satisfaction.

Representative support for this relationship is cited by Herzberg et al. (1957) and include The American Vocational Association Committee on Research Publications (1948), Chase (1951), and Harris (1949).

The concept of length of service is most often treated under "employee turnover" in the literature. The present investigation will not consider "turnover rates." The importance of length of service rests in the potential ability of the variable to predict job satisfaction.

RESIDENCE AND JOB SATISFACTION

Worthy (1950) and Habbe (1947) both found lower job satisfaction in large industrialized metropolitan areas. Job satisfaction was found to be higher in smaller cities and rural areas. More recently, Katzell, Barrett and Parker (1961) found that city size and job satisfaction were negatively correlated. This was further supported in the following year by Cureton and Katzell (1962) and later by Turner and Lawrence (1965), Hulen and Blood (1968), and Susman (1973). The literature suggests that the variable is appropriate and potentially useful in the present study.

SUMMARY

This chapter has discussed the relationships between perception of bureaucracy, perceptions of role conflict, and various socio-demographic variables and job satisfaction.

The literature suggests that there is an inverse relationship between the degree of bureaucratization and job satisfaction. Five dimensions of perceptions of bureaucracy were discussed. These dimensions include division of labor, procedures, technical qualifications, impersonality and hierarchy. The dimensions of work procedures and technical qualifications evidence a positive relationship with job satisfaction and in other cases an

inverse relationship. The present study provides further evidence to clarify these relationships.

Role conflict is also considered a multidimensional concept. The dimensions include person role conflict, inter-sender conflict, intra-sender conflict, and role overload. The literature suggests an inverse relationship between role conflict and job satisfaction.

Previous research shows consistent evidence of a curvilinear relationship between age and job satisfaction. This curvilinearity will be taken into account in the data analysis.

With few exceptions, the literature cited in this chapter suggests a positive relationship between income, length of service, and education and job satisfaction.

Finally, the bulk of the evidence cited suggests a negative relationship between residence and job satisfaction.

All of the variables cited and discussed in the literature review are reflected in the predictive model, the subject of Chapter III.

CHAPTER III

THE MODEL AND HYPOTHESES TO BE TESTED

THE MODEL

The multivariate model of job satisfaction developed and tested in this study is composed of variables frequently found in the literature. The literature on job satisfaction reflects numerous bivariate studies of job satisfaction with some contradictory findings. The incompatibility of the data comprising these studies makes systematic comparison difficult. The model shown in Figure I reflects 14 independent variables thought to have an impact on job satisfaction.

The socio-demographic variables are grouped in a block because they jointly represent background variables, as opposed to actual work setting variables. This distinction is important in that there is some debate as to what kinds of variables have the greatest impact on job satisfaction. Blauner (1964) argues that background variables are most critical, while Kornhauser (1965) suggests that work setting variables have the greatest impact on job satisfaction.

While both perceptions of role conflict and perceptions of bureaucracy are work setting variables they are distinctly different and thus comprise separate blocks.

The analysis of the impact of each of these blocks of variables, alone and in combination with the others, is accomplished through the technique of multiple-partial correlation. Blalock (1969) and Sullivan (1971) have suggested the advantages of multiple-partial correlation over other techniques, such as analysis of variance. These advantages include 1) parsimonious evaluation, 2) the possibility of finding that all blocks of variables operate together, 3) the number of possible predictions is made realistic, 4) the technique does not require causal linkages between the blocks.

Blalock (1972:459) has stated the general procedure for computing multiple-partial correlations; where r_{ni}^2 is the multiple-partial correlation coefficient.

$$r_{ni}^2(\text{JK} \dots \text{N}) \dots \text{tu} \dots \text{w} = \frac{R^2 \dots \text{JK} \dots \text{N} - R_i^2 \dots \text{tu} \dots \text{w}}{1 - R^2 \dots \text{tu} \dots \text{w}}$$

noting that:

tu...w = control variable
 JK...N = independent variable
 i = dependent variable

Blalock (1972:459) commented on the use of this procedure in sociological research by stating:

The multiple-partial does not seem to have been used very frequently in sociological research, perhaps because of its lack of familiarity to persons in the field. As a

A) Socio-demographic variables

1. age
2. education
3. income
4. residence
5. length of service

B) Perceptions of role conflict

1. person-role conflict
2. intra-sender conflict
3. inter-sender conflict
4. role overload

C) Perceptions of bureaucracy

1. technical qualifications
2. procedures
3. division of labor
4. hierarchy
5. impersonality

```
graph LR; A["A) Socio-demographic variables  
1. age  
2. education  
3. income  
4. residence  
5. length of service"]; B["B) Perceptions of role conflict  
1. person-role conflict  
2. intra-sender conflict  
3. inter-sender conflict  
4. role overload"]; C["C) Perceptions of bureaucracy  
1. technical qualifications  
2. procedures  
3. division of labor  
4. hierarchy  
5. impersonality"]; A --> JS["JOB SATISFACTION"]; B --> JS; C --> JS;
```

FIGURE I

THE MULTIVARIATE PREDICTIVE MODEL
OF PROFESSIONAL JOB SATISFACTION

measure which enables one to handle both multiple and partial correlation problems simultaneously, its potential utility would seem to be great, however.

THE PROCEDURE FOR COMPUTING MULTIPLE-PARTIAL CORRELATION

The model of professional job satisfaction tested here consists of three blocks of independent variables. In order to show how the statistical control for blocks of variables is achieved, it is necessary to reformulate the model. Let A = socio-demographic variables, B = role conflict, C = perceptions of bureaucracy, and D = job satisfaction. The model is then shown in Figure II. The formula for controlling blocks of variables is then expressed as:

$$r^2_{d(ab).c} = \frac{R^2_{d.abc} - R^2_{dc}}{1 - R^2_{dc}}$$

where:

- a = control variable
- b = independent variable
- c = independent variable
- d = dependent variable

Substituting alphabetic characters as in the above model, Blalock's (1972:459) explanation of this procedure is paraphrased as follows:

First we let control variable (c) do all the explaining it can. We then note that $R^2_{d.abc}$ represents the proportion of

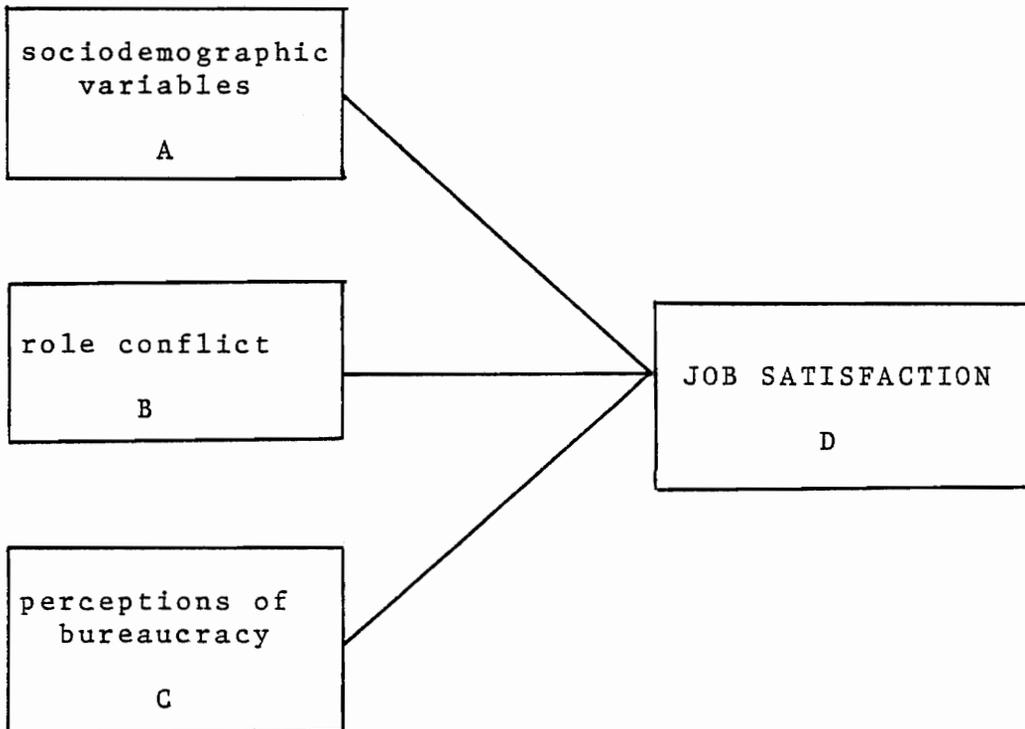


FIGURE II

THE PREDICTIVE MODEL DEPICTING SIMPLIFIED
BLOCKS OF VARIABLES

variation explained by all of the three independent variables taken together. The difference, then, must be due to variables a and b. The numerator thus represents the proportion of variation explained by a and b. The denominator thus represents the proportion of variation explained by a and b over and above that explained by c. But since we must work only with that variation left unexplained by the control variable, we divide by the quantity $1 - r_{dc}^2$.

A further application of this formula shows the expressions necessary for the complete analysis procedure.

r_{da}^2 . bc = The amount of variance in job satisfaction explained by the socio-demographic variables while controlling role conflict and perceptions of bureaucracy.

r_{db}^2 . ac = The amount of variance in job satisfaction explained by role conflict while controlling for the socio-demographic variables and perceptions of bureaucracy.

r_{dc}^2 . ab = The amount of variance in job satisfaction explained by bureaucracy while controlling for the socio-demographic and role conflict variables.

R_d^2 . abc = The amount of variance in job satisfaction explained by complete model.

HYPOTHESES

1. The higher the perception of the level of bureaucratization, the lower the perceived level of job satisfaction.
2. The higher the perception of the level of role conflict, the lower the perceived level of job satisfaction.
3. The higher the level on each socio-demographic

variable, the higher the perceived level of job satisfaction. (excluding residence)

4. The greater the population of the present residence, the lower the perceived level of job satisfaction.

The evidence that will serve as a basis for testing these hypotheses will be discussed in Chapter V.

SUMMARY

The multivariate predictive model of job satisfaction to be tested in this study was outlined. Fourteen independent variables thought to have an impact on job satisfaction are included in this model. The technique of multiple-partial correlation was outlined and the advantage of this technique were discussed.

The hypothesized relationship between each variable in the model and job satisfaction was explicitly stated and are tested through standardized regression coefficients and F values.

CHAPTER IV
METHODOLOGICAL PROCEDURES

INTRODUCTION

This chapter has four purposes; 1) to describe the sample; 2) to present and discuss the measurement of the independent variables and the dependent variable of this study; 3) to review the selection of the sample for this study; 4) and to assess the representativeness of the sample and discuss the procedure used to assess return bias.

THE SAMPLE

The sample for this study of professional job satisfaction was drawn from the 1974 membership list of the American Fisheries Society. A 20 percent random sample without replacement was drawn from this list. A mail questionnaire (Appendix B) was initially sent to 800 members on October 7, 1976. Thus, 18% of the 4519 members of the Society were mailed questionnaires. By December 1, 1976 approximately 63 percent of the members had completed and returned the questionnaire. This includes incomplete or otherwise unusable questionnaires. A follow-up post card (Appendix C) reminder was sent to the remaining 37 percent on December 2, 1976. When the sampling period ended on February 1, 1977, 39 percent of

those sampled had returned complete and usable questionnaires. Thus, the subsequent analysis is based on 308 cases. The most frequent reasons for deleting a case from the analysis was the partial completion of the scales or the respondent not considering himself a professional fisheries biologist.

MEASUREMENT OF THE INDEPENDENT VARIABLES

PERCEPTIONS OF BUREAUCRACY

A modified form of Hall's (1963) organizational inventory was used to gather data on the perceived degree of bureaucracy. The original scale included six dimensions as follows: 1) division of labor; 2) procedures, 3) impersonality, 4) hierarchy of authority, 5) technical qualifications, and 6) rules. The scale was modified by omitting the rules dimension and by omitting three items from each of the five remaining dimensions. The modified scale was then composed of 15 items soliciting a Likert-type response. Following Snizek et al., (1976), the deletion of the rules dimension and the other items was necessary to prevent respondent fatigue.

The items used to measure each dimension of perceptions of bureaucracy are:

A. Technical Qualifications

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

2. People here are given raises according to how well they are liked rather than how well they do their job.
3. There is little chance for promotion unless you are "in" with the boss.

B. Procedures

1. The organization stresses following the established procedures.
2. Standard procedures are to be followed in almost all situations.
3. We are to follow strict operating procedures at all times.

C. Division of Labor

1. One thing people like around here is the variety of work they get to do.
2. There is something new and different to do almost every day.
3. Most jobs in this organization involve a variety of different kinds of activities.

D. Hierarchy

1. There can be little action until a supervisor approves a decision.
2. A person who likes to make his or her own decisions would be discouraged here.
3. I feel that I can act as my own boss in most matters.

E. Impersonality

1. This organization is always sponsoring employee get-togethers.
2. A person gets a chance to develop good friends here.
3. A friendly atmosphere is evident to everyone who works here.

PERCEPTIONS OF ROLE CONFLICT

Miles (1974) has developed a role conflict scale. The dimensions of this 10 item scale has been shown to be reliable when used in previous research on rural occupations in Virginia and was used in this study (Bryant

et al., 1976). The items used to measure each dimension of role conflict are:

- A. person-role conflict
 - 1. I have to do things that should be done differently.
 - 2. I have to work on unnecessary things.
 - 3. I have to do things that are against my personal principles.
- B. intra-sender conflict
 - 4. I receive assignments without the proper help to complete them.
 - 5. I receive assignments without adequate resources and material to execute them.
- C. inter-sender conflict
 - 6. I work with two or more groups who operate quite differently.
 - 7. I have to buck a rule or policy in order to carry out an assignment.
 - 8. I receive incompatible requests from two or more people.
 - 9. I do things that are apt to be accepted by one person and not accepted by others.
- D. role overload
 - 10. I frequently have much more to do than I can handle during the available time at work.

AGE

The respondent was asked to answer the question: What was your age at your last birthday? _____

INCOME

Information on family income was gathered by asking: What was your approximate family income from all sources, before taxes, in 1975?

_____ \$10,000 and under	_____ \$30,000 to \$40,000
_____ \$10,000 to \$15,000	_____ \$40,000 to \$50,000
_____ \$15,000 to \$20,000	_____ \$50,000 to \$75,000
_____ \$20,000 to \$25,000	_____ \$75,000 to \$100,000
_____ \$25,000 to \$30,000	_____ \$100,000 and over

EDUCATION

Information on education was gathered through responses to the following:

Education--Check all that apply and specify fields of study for degrees that you hold.

- _____ Ph.D. specify field
- _____ M.A./M.S. + hours toward Ph.D.
- _____ M.A./M.S. specify field
- _____ B.A./B.S. + hours toward masters
- _____ B.A./B.S. specify field
- _____ Some college credits, no degree
- _____ A.A./A.S./2 yr. technical
- _____ High school diploma
- _____ Some high school
- _____ Eight years or less

The highest category checked was used as the measure of education.

LENGTH OF SERVICE

The number of years of service as a fisheries biologist was determined by asking: How long (to the nearest year) have you been a fisheries biologist? _____ Years

RESIDENCE

Residence size was determined by the following question?

Present Residence Size: What would you estimate the population of the community to be in which you are currently living? (Check one)

<input type="checkbox"/> Open country	<input type="checkbox"/> Large town, 5000-9999
<input type="checkbox"/> Small village less than or equal to 999	<input type="checkbox"/> Small city, 10,000-49,999
<input type="checkbox"/> Large village 1000-2499	<input type="checkbox"/> Large city, 50,000-99,000
<input type="checkbox"/> Small town, 2500-4999	<input type="checkbox"/> Metropolitan area of 100,000 or more

MEASUREMENT OF THE DEPENDENT VARIABLE

JOB SATISFACTION

Early attempts to measure job satisfaction include Bingham (1928) and Hoppock (1935). These two studies represent divergent approaches in the measurement of job satisfaction. Hoppock was concerned with the development of an overall measure of job satisfaction, while Bingham concentrated on delineating the dimensions of the concept. These two traditions have continued up to the present. The unidimensionalists include Brayfield and Roth (1951); Pallone et al. (1970); Hulen and Smith (1967); and Graen (1968). The multidimensionalists include Katz (1949); Kerr (1948); Baehr (1954); Ash (1954); and Herzberg et al. (1957).

The choice between these approaches would depend on the nature of the research problem. The unidimensional

approach is appropriate when the impact of various factors on overall job satisfaction is to be determined.

As stated previously, the unidimensional definition by Vroom (1964:99) is used in this study. He defines job satisfaction as follows:

Job satisfaction is the positive orientation of an individual toward the work role which he is presently occupying--which can be restated as an individual liking more aspects of the job than he dislikes.

This definition of job satisfaction does not reflect dimensions or kinds of satisfaction but, rather, refers to overall satisfaction. This definition is compatible with the unidimensional index of job satisfaction developed by Brayfield and Roth (1951) and is used in this study. The following items comprise this scale:

1. My job is like a hobby to me.
2. My job is usually interesting enough to keep me from getting bored.
3. It seems that my friends are more interested in their jobs.
4. I consider my job rather pleasant.
5. I enjoy my work more than my leisure time.
6. I am often bored with my job.
7. I feel fairly satisfied with my job.
8. Most of the time I have to force myself to go to work.

9. I am most satisfied with my job for the time being.
10. I feel that my job is no more interesting than others I could get.
11. I definitely dislike my work.
12. I feel that I am happier in my work than most other people.
13. Most days I am enthusiastic about my work.
14. Each day of work seems like it will never end.
15. I like my job better than the average worker does.
16. My job is pretty uninteresting.
17. I find enjoyment in my work.
18. I am disappointed that I ever took this job.

ANALYSIS OF RETURN BIAS

In order to determine if the sample showed a return bias, the time of return was dichotomized; those who returned the questionnaire prior to December 2, 1976 were termed early, while those who returned the questionnaire after that date were termed late. Role conflict, perceptions of bureaucracy, and job satisfaction were dichotomized at the median into high and low categories. Crosstabulation analysis of the resulting 2 x 2 tables was performed. Future research would be improved by recording the date of questionnaire return and using ordinal data in determining return bias.

The chi-square values shown in Table I indicate that with three exceptions, there are no significant differences between early and late respondents on any variable in the model. Residence, inter-sender conflict, and role overload were significant at the .20 level of statistical probability.

Early respondents tended to reside in large cities and report lower inter-sender conflict and role overload than later respondents, who tended to reside in smaller cities and report higher inter-sender and role overload. Since later respondents tend to resemble non-respondents, the findings of this study are most generalizable to professionals in larger cities and metropolitan areas. However, because so few variables were affected, this return bias does not greatly reduce the generalizability of this study.

ASSESSMENT OF MEASUREMENT ERROR

This study assesses measurement error through Cronbach's alpha reliability coefficient. Nunnally (1967:226) has provided guidelines for acceptable reliability coefficients. He states:

What a satisfactory level of reliability is depends on how a measure is being used. In early stages of research on predictor tests or hypothesized measures of a construct, one saves time and energy by working with instruments that have only modest reliability for which purpose reliabilities of .60 or .50 will suffice. . . . For basic research, it can be argued that

TABLE 1

CHI SQUARE VALUES USED TO DETERMINE
RETURN BIAS FOR EACH VARIABLE IN THE MODEL*

Variable	Chi-Square
Age	.1030
Income	.0004
Education	.8608
Length of Service	.0050
Residence	3.068*
Role Conflict	.0037
<u>Dimensions</u>	
Person-role conflict	1.212
Intra-sender conflict	1.394
Inter-sender conflict	7.290*
Role overload	1.750*
Bureaucracy	.1291
<u>Dimensions</u>	
Technical Qualifications	.2399
Procedures	.0017
Division	.0933
Hierarchy	.0232
Impersonality	.0311
Job satisfaction	.1291

*Significant X^2 at $\alpha = .20$, degrees of freedom = 1

*The cell frequencies for the 17 tables are shown
in Appendix E.

increasing reliabilities beyond .80 is wasteful. . . In contrast to standards for basic research, in many applied settings a reliability of .80 is not nearly high enough.

The alpha coefficients for each score and dimension are shown in Table 2. The alpha coefficient of .89 for the job satisfaction scale is acceptable for basic research.

The coefficients of .83 for the role conflict scale and .80 for the bureaucracy scale are also acceptable for basic research. Further details on reliability is suggested by considering the alpha coefficient for each dimension of the role conflict and bureaucracy scales.

The alpha coefficients of .73 and .72 for inter-sender and person role dimensions, respectively, indicate acceptable reliability. These coefficients exceed Nunnally's suggestions for exploratory research but are somewhat less than .80 suggested for basic research. The moderate reliability of .47 for the intra-sender conflict dimension suggests that the measurement of this dimension involved error. It is the smallest dimension for which an alpha coefficient was computed. This does, in part, accent error in measurement. The reader should be cognizant of this point where interpreting the coefficient.

Focusing on the dimensions of bureaucracy, the procedures dimension with an alpha coefficient of .81 is

TABLE 2

ALPHA RELIABILITY COEFFICIENTS FOR THE DIMENSIONS
OF ROLE CONFLICT, PERCEPTIONS OF BUREAUCRACY,
AND THE JOB SATISFACTION SCALE

Scale	Alpha	Number of Items in Each Scale and Dimension
Role Conflict		10
Overall	.83	
Dimensions:		
person-role conflict	.72	3
intra-sender conflict	.47	2
inter-sender conflict	.73	4
role overload	-	1
Perceptions of Bureaucracy		15
Overall	.80	
Dimensions:		
technical qualifications	.73	3
procedures	.81	3
division of labor	.65	3
hierarchy	.59	3
impersonality	.57	3
Job Satisfaction		18
Overall	.89	

acceptable for basic research. Likewise, the alpha of .73 associated with technical qualifications is acceptable for basic research. The remaining dimensions of division of labor, hierarchy, and impersonality with alpha coefficients of .65, .59, and .57 have moderate reliability.

SUMMARY

The measurement procedure for each variable in the model was outlined in this chapter. Additionally, each dimension of the role conflict and bureaucracy scales were discussed.

A 20 percent random sample from the 1974 membership list of the American Fisheries Society was drawn. Of the 800 members who received questionnaires, 443 or 55% were returned. This study is based on 308 of the returned questionnaires. 135 cases were deleted because of incomplete questionnaires and the respondent not being a professional fisheries biologist.

Two reasons are given for the adjusted sample size. First, several respondents failed to provide a response to one or more variables in the model. Secondly, 80 of the respondents did not consider themselves professional fisheries biologists and were excluded from the study.

The differences between early and late respondents showed that bias is present on two dimensions, that of

role conflict and residence.

Finally, the reliability of each scale and dimension was estimated through the computation on Cronbach's alpha. The discussion of these coefficients suggested that the reliabilities of each scale and dimension is acceptable for the research purposes of this study.

CHAPTER V
DATA PRESENTATION AND ANALYSIS

INTRODUCTION

The purpose of this chapter is to discuss the evidence for supporting or rejecting the hypotheses of this study. This will be accomplished by assessing the impacts of each block of variables and the full model on job satisfaction.

The data are analyzed through the technique of multiple regression using standardized regression coefficients. The impact of each block of variables on job satisfaction will be determined through multiple partial correlations.

A MULTIPLE CORRELATION ASSESSMENT OF THE IMPACT
OF EACH BLOCK OF VARIABLES ON JOB SATISFACTION

The amount of variance in job satisfaction explained by each block of variables and combinations of blocks without partialling is shown in Table 3. The multiple R^2 values shown in column 2 are provided for reader information. However, the present analysis is based on the R^2 adjusted for degrees of freedom. In terms of explained variance, this procedure results in a more conservative coefficient.

An inspection of column 3 in Table 3 shows the socio-demographic block consisting of age, education, income, residence and length of service, accounts for less than one percent of the variance in job satisfaction. The F

TABLE 3

THE REGRESSION OF JOB SATISFACTION ON THE SOCIO-DEMOGRAPHIC PERCEPTIONS OF ROLE CONFLICT, AND PERCEPTIONS OF BUREAUCRACY VARIABLES

Variable	Number of Items	Multiple R ²	Adjusted R ²	F
Socio-demographic	5	.012	-.003	.795
Perceptions of role conflict	4	.194	.183	18.24***
Perceptions of bureaucracy	5	.274	.262	22.90***
Socio-demographic and role conflict	9	.199	.174	8.23***
Socio-demographic and perceptions of bureaucracy	10	.290	.266	12.14***
Perceptions of role conflict and perceptions of bureaucracy	9	.327	.306	16.09***
Socio-demographic, perceptions of role conflict, and perceptions of bureaucracy	14	.338	.307	10.71***

***significant at the .001 level of statistical probability degrees of freedom equal the number of items and 308 minus number of items minus 1

value .795 is not statistically significant (α .05).

The perceptions of bureaucracy block which includes technical qualifications, procedures, division of labor, hierarchy, and impersonality, explains 26 percent of job satisfaction as measured in this study. The F value of 22.90 is statistically significant at the .001 level of statistical probability.

The role conflict variables explain 18 percent of the variance in job satisfaction. The associated F value of 18.24 is significant at the .001 level of statistical probability.

The combination of socio-demographic and role conflict variables explain 17 percent of the variance in job satisfaction. The F value of 8.23 associated with this combination is statistically significant at the .001 level of statistical probability.

The combined impact of the socio-demographic and perceptions of bureaucracy variables is reflected in the adjusted R^2 of .266. The associated F value of 12.14 is statistically significant at a .001 level of alpha. The 2-block combination with the greatest impact on job satisfaction is that of role conflict and perceptions of bureaucracy. This combination explains 30 percent of the variance in job satisfaction. The F value of 16.09 is

statistically significant at the .001 level of statistical probability.

Finally, the total model, including the socio-demographic, role conflict and perceptions of bureaucracy variables, explains 30 percent of the variance in job satisfaction. The F value of 10.71 is statistically significant at the .001 level. As expected, the additional socio-demographic variables do not substantially increase the proportion of explained variance. (.306 vs .307).

AN ASSESSMENT OF THE IMPACT OF THE FULL MODEL ON JOB SATISFACTION

A further test and analysis of the predictive model of job satisfaction is accomplished through the assessment of the standardized partial regression coefficients (betas) in the full model without blocks. The data relative to this analysis are shown in Table 4.

The hierarchy of authority variable, with a standardized regression coefficient of $-.241$, has the single greatest impact on a job satisfaction. Hierarchy is followed by division of labor ($-.230$), role overload ($.179$), person role conflict ($-.161$), inter-sender conflict, length of service ($-.070$), intra-sender conflict ($.069$), procedures ($.062$), and technical qualifications ($.056$). Each of the remaining variables in the model explain less than five

TABLE 4

THE SIMULTANEOUS REGRESSION
OF JOB SATISFACTION ON ALL VARIABLES IN THE MODEL*

Variable	Beta	Zero-Order Correlation	F
Age	-.031	-.035	.088
Income	-.009	.019	.024
Education	.024	.073	.231
Length of Service	-.070	-.048	.436
Residence	-.023	-.053	.222
Person Role Conflict	-.161	-.342	5.95***
Intra-sender Conflict	.069	-.138	1.32
Inter-sender Conflict	-.123	-.258	3.72***
Role Overload	.179	.165	11.25***
Technical Qualifi- cations	.056	.330	.888
Procedures	.062	-.097	1.44
Division of labor	-.230	-.385	17.89***
Hierarchy	-.241	-.455	14.14***
Impersonality	-.045	-.259	.695

***significant at the .001 level of statistical probability with 14 and 293 degrees of freedom.

*A revised model based on the statistically significant coefficients appears in Appendix F.

percent of variance in job satisfaction. Table 4 also shows that intra-sender conflict and the procedures dimension of bureaucracy changed signs from a negative zero correlation to a positive beta. Income changed from a positive zero order correlation with job satisfaction to a negative beta. The F values for these variables, however, show that these changes are not significant.

A COMPARISON OF THE BETAS WITHIN BLOCKS AND IN THE FULL MODEL

Table 5 compares the beta coefficients within each block of the model with those in the full model. Such a comparison makes it possible to determine whether there is any significant statistical interaction present in the model.

None of the variables within the blocks changes signs when job satisfaction is regressed on the full model. Technical qualifications changed from a statistically significant beta of .124 within the bureaucracy block to a non-significant beta of .056 in the full model. This change is a result of controlling for all other variables in the full model. With the exception of technical qualifications, those variables that were statistically significant within the blocks remained statistically significant in the full model. Since none of the variables changed signs in the

TABLE 5
 A COMPARISON OF THE BETA COEFFICIENTS
 WITHIN BLOCKS WITH THOSE IN THE FULL MODEL

Variable	Beta coefficients within blocks	Beta coefficients in the full model
Age	-.023	-.031
Income	-.051	.009
Education	.069	.024
Length of Service	-.049	-.070
Residence	-.067	-.023
Person-role Conflict	-.298***	-.161***
Intra-sender Conflict	.012	.069
Inter-sender Conflict	-.183***	-.123***
Role Overload	.279***	.179***
Technical Qualifications	.124***	.056
Procedures	.125	.062
Division of Labor	-.236***	-.230***
Hierarchy	-.299***	-.241***
Impersonality	-.031	-.045

***significant at the .001 level of statistical probability

full model, it may be concluded there is no significant statistical interaction present in the model.

Person role conflict, inter-sender conflict, role overload, and division of labor decreased in magnitude from the block betas to the full model. Again, this is the result of the statistical control for the remaining variables in the full model.

A MULTIPLE PARTIAL CORRELATIONAL ASSESSMENT OF
THE IMPACT OF EACH BLOCK OF VARIABLES ON
JOB SATISFACTION

The relative impact of each block of variables while statistically controlling the remaining blocks is accomplished through the technique of multiple partial correlation. The general procedure for computing the multiple partial correlation as outlined by Blalock (1972) was discussed in Chapter III.

$$R^2_i (JK\dots n)\dots tu\dots w = \frac{R^2_i \dots K\dots W - R^2_1 \dots tu\dots w}{1 - R^2 \dots tu\dots w}$$

where: tu...w = blocks of control variables
JK...n = blocks of independent variables
i = dependent variable

Table 6 shows the impact of each block of variables after the computation of the multiple partial correlations. Column 1 in Table 6 shows that the total model explains 30 percent of the variance in job satisfaction. Column 2

TABLE 6

PERCENT OF VARIANCE IN JOB SATISFACTION EXPLAINED
BY THE SOCIO-DEMOGRAPHIC, PERCEPTIONS
OF ROLE CONFLICT, AND PERCEPTIONS
OF BUREAUCRACY VARIABLES

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	Ratio of Col 2 to 1	Ratio of Col 3 to 1	Ratio of Col 4 to 1
Variance explained by A, B, C	Variance explained by A controlling for B and C	Variance explained by B controlling for A and C	Variance explained by C controlling for B and A			
.307	.001	.055	.160	.003	.179	.521

A = Socio-demographic variables, B = Perceptions of role conflict,
C = Perceptions of bureaucracy

shows that when role conflict and perceptions of bureaucracy are controlled, the socio-demographic variables explain less than 1 percent of the variance in job satisfaction. Role conflict explains 5 percent of the variance in job satisfaction when the socio-demographic and bureaucracy variables are controlled. After controlling for the socio-demographic and role conflicts blocks, bureaucracy explains 16 percent of the variance in job satisfaction.

As previously stated, the full model explains 30 percent of the variance in professional job satisfaction. While this represents a substantial explanation, it should be noted that 70 percent of the variance in professional job satisfaction remains unexplained by the model. Of the variance explained in the full model, the ratio of column 2 to column 1 indicates that less than 1 percent of the variance is contributed by the socio-demographic variables. The perceptions of role conflict variable contributes about 17 percent of the total explained variance, and the perceptions of bureaucracy variables contribute about 52 percent of the total explained variance.

A DISCUSSION OF THE HYPOTHESES

The data presented in Tables 3 and 4 provide a basis for the discussion of the hypothesis tested in this study. As previously noted, it is hypothesized that while controlling

for the other variables in the model;

1. The higher the perception of the level of bureaucratization, the lower the perceived level of job satisfaction.
2. The higher the perception of the level of role conflict, the lower the perceived level of job satisfaction.
3. The higher the level of each socio-demographic variable, the higher the perceived level of job satisfaction. (excluding residence)
4. The greater the population of the present residence, the lower the perceived level of job satisfaction.

Hypothesis 1: Technical qualifications, division of labor, hierarchy, procedures, and technical qualifications comprise the measures of bureaucratization. It was shown that the joint impact of these variables explain 26 percent of the variance in job satisfaction. The F value of 22.90 is statistically significant at the .001 level. Division of labor and hierarchy show negative beta signs and are significant at the .001 level of statistical probability. Impersonality shows a negative beta sign but is not statistically significant. However, the technical qualifications and procedures dimension show positive beta signs indicating a positive relationship between these variables and job satisfaction but without statistical significance.

In brief, only the division of labor and hierarchy dimensions of bureaucracy support this hypothesis.

Hypothesis 2: Person role conflict, inter-sender conflict and intra-sender conflict and role overload comprise the measures of role conflict. These variables jointly explain 18 percent of the variance in job satisfaction, the reported F value of 18.24 in Table 3 is statistically significant at the .001 level of statistical probability.

Table 4 shows that with the exception of intra-sender conflict, the dimensions are significant at the .001 level. Inter-role and person role conflict show negative signs indicating an inverse relationship with job satisfaction. Role overload shows a statistically significant positive beta of .179. Excluding intra-sender conflict and role overload, the findings support hypothesis 2.

Hypothesis 3: Age, income, education, length of service have no statistically significant impact on job satisfaction. As shown in Table 4, these variables explain less than one percent of the variance in job satisfaction. Thus hypothesis 3 is not supported by the data in this study.

Hypothesis 4: Table 4 shows a negative beta of $-.023$ associated with residence. The F value of .222 is not statistically significant and, on this basis, hypothesis 4 is not supported by the data.

CHAPTER VI

DISCUSSION OF FINDINGS

INTRODUCTION

The purposes of this Chapter are 1) to discuss the statistical procedures employed to elucidate the observed statistical relationships where appropriate, 2) to offer theoretical explanations for the observed statistically significant relationships in each block of variables, 3) to offer explanations for the finding that some independent variables have no statistically significant impact on job satisfaction, 4) to summarize the findings of this study, and 5) to offer suggestions for future research.

THE SOCIO-DEMOGRAPHIC BLOCK

As previously stated, age, education, income, residence, and length of service comprise the socio-demographic block. While these variables may be treated as analytically distinct, their similarity is evident in that none has a significant impact on professional job satisfaction. This similarity is also evident in that these variables comprise occupational background characteristics as opposed to actual work setting variables found in the bureaucracy and role conflict blocks.

The negligible impact of these socio-demographic variables on job satisfaction contradicts much of the literature cited in Chapter Two. This is in part explained by the fact that these findings are mainly from studies of non-professionals. While this study does not lay the

issue to rest, it does suggest fundamental differences between professionals and non-professionals that must be considered in explaining and predicting job satisfaction.

Professionals, unlike non-professionals, experience an extended period of occupational socialization. This process has been the subject of several studies, including those of Becker and Carper (1956), Merton et al., (1957), Lortie (1959). These studies of professional socialization, and thus education, elucidate processes whereby recruits become professional practitioners and internalize values and expectations deemed desirable by the particular profession. This study has not collected data on professional socialization, but the bi-modal education level distribution of M.S. and Ph.D. is evidence that those sampled have experienced an extended period of professional training and socialization.

A distinction may be made between formal and informal socialization. Ritzer (1977:74) in discussing formal professional socialization states:

On the formal level virtually every type of professional school has courses designed to communicate knowledge and to offer opportunities for recruits to learn the skills they need.... In most graduate schools the emphasis is on formal course work designed to enable the student to pass preliminary examinations - but opportunities to gain some practical experience are also offered. A school may require students to assist in a course or in a research project in order to gain experience in research design, methodology, and analysis; disser-

tation research is also designed to give the student practical experience.

The informal process of socialization is less structured than the formal process but remains pervasive and important. In discussing the informal process Ritzer (1977:74-75) holds the position that:

No matter how well they perform their formal tasks, professional schools leave many of the important aspects of professional training to an informal system.... The informal system in such schools serves to communicate the norms and values of the profession and, in the process, generally changes initial idealism to a more realistic view.

In this regard Ritzer (1977:75) quotes Lortie (1959: 353) as stating;

There is a gradual replacement of the exotic and dramatized image by one which takes account of the routine and pedestrian elements.

The "Reality Shock" in the transition from school to professional practice in bureaucratic settings is in part explained by the conflict between professional norms and values that are internalized during the process of socialization and the requirements for control in employing bureaucracies.

The lack of a significant relationship between each of the socio-demographic variables and professional job satisfaction may be explained by this socialization process. The utility of this socialization process in explaining the minimal impact of the socio-demographic

variables on job satisfaction will be discussed relative to each variable.

AGE

The finding that age has no significant impact on job satisfaction requires further statistical explanation. The literature, especially Herzberg (1957:5-6), suggests that the relationship between age and job satisfaction is curvilinear.

In order to determine whether treating age as curvilinear would improve prediction, a comparison of the linear multiple regression model with the model including the square of age is necessary. Blalock (1972:460) has suggested that curvilinearity may be determined by treating the variable in question as a second-degree polynomial.

The inclusion of the square of age in the multiple regression equation did not significantly improve prediction. This is evident from an F value of .949 which is not statistically significant ($\alpha.05$) with 14,293 degrees of freedom. Further evidence that age, as a second-degree polynomial, does not improve prediction is evident from the comparison of the adjusted R^2 's. In the full model, assuming linearity, age explains .307 percent of the variance in job satisfaction. When age as a second-degree polynomial is entered into the equation the model, it explains .304 percent of the variance in job satis-

faction. On this basis, it is evident that age as a second-degree polynomial is not a better predictor of job satisfaction.

Gross (1960:129) has suggested that age may be a factor used in recruiting professional trainees or conceptualizing rates of occupational mobility (Gross 1960:200). Reiss (1965) has argued that while established professions show a higher mean age than that of marginal professions, age does not explain the observed differences in mobility. Thus, while age has been studied in relation to professional recruitment and mobility, it has not been extensively studied in relation to professional job satisfaction. This may be in part explained by the emphasis on universalistic rather than particularistic standards of professional work and evaluation. Work among professionals is assigned on the basis of technical expertise and demonstrated qualifications. Thus, age does not determine work assignments and does not determine satisfaction derived from that work.

EDUCATION LEVEL

The principle reason for finding that education has no impact on professional job satisfaction is that the variation in education is minimal among the professionals sampled. Ninety-eight percent of the sample held B.A. or B.S. degrees or higher. The distribution of education is

bi-modal with 30 percent of the 308 respondents holding an M.A. or M.S. degree and 22 percent holding a Ph.D. This homogeneity probably accounts for much of the finding of no relationship between education and job satisfaction. Specifically, a high amount of education is an attribute of professionals.

A particular type of higher education is a prerequisite to enter an established profession but evidently has little bearing on the satisfaction derived from work. The disposition toward job satisfaction is not carried into bureaucracies via educational levels but is a result of actual work setting variables regardless of educational level. While established professions may be comprised of members with different educational levels, the levels of job satisfaction cannot be viewed as being determined by educational levels since the nature, type, and conditions of work do not depend on the type of examination or entrance procedure completed by the professional.

A prolonged education is, nevertheless, important in teaching the value of autonomy to aspirant professionals. The concept of autonomy has been discussed by Kornhauser (1962:1) as follows:

Professional expertise is based on the belief that the performance of a vital function in society requires specialized knowledge and skill, which must be through prolonged education and experience. Professional autonomy is based on the belief

that the qualified practitioners are best able to determine how the function ought to be performed, and that each practitioner must be free to exercise his own judgment in the specific case.....professional responsibility is based on the belief that the power conferred by expertise entails a fiduciary relationship to society.

The internalization of such autonomy through education is in direct contrast to many organizational values. Thus the variable of education remains heuristically important in understanding professional job satisfaction.

INCOME AND WORK ROLE OVERLOAD

It was shown in the data analysis that income is not an adequate predictor of professional job satisfaction. Fichter (1961:177) has commented on this relationship by stating:

In spite of occasional instances of avarice and self-interest, the professions publicly reject size of financial income as the measure of success. The common stereotype of the professional is that of a man who is not interested in money, and who is also supposedly a "poor businessman." He does not work in order to be paid, "he is paid in order that he may work."

Gross (1958:79) has also suggested that "professionals are not supposed to be interested in sordid money." The idea that professionals do not work in order to be paid but are paid in order that they may work does suggest that work, as opposed to income, is a central life interest among professionals.

The extended period of training and socialization required of professionals is usually a period of deferred gratification where monetary reward must be sacrificed. The successful completion of a professional education also allows the professional aspirant to determine the level of monetary reward that may be expected in his field.

These factors combine in such a way as to reduce the significance of monetary income among professionals deriving satisfaction from their work.

Although professionals may play down the importance of monetary income in deriving satisfaction from their work, they evidently derive satisfaction from other sources of income. Herzberg et al., (1957:50) stated that "It is easier to express needs in terms of money than in terms of such intangibles as prestige and appreciation." Evidently professionals experience no difficulty on this point. The reward structure of professionals emphasizes "psychic income" such as prestige, appreciation, recognition, and respect. Many professionals who display wealth and material possessions in a conspicuous manner are likely to be considered charlatans or at least less than ideally professional. This is especially true in the low paying professions such as teaching and other service professions.

The alternative psychic income structure partially explains the significant positive relationship between work role overload and job satisfaction. When a pro-

professional frequently has much more to do than can be handled during available time at work, assuming that some work tasks are successfully completed, recognition, appreciation, and prestige are forthcoming as "psychic rewards." Orzack (1959) and Dubin (1956) have stated that the centrality of work among professionals is such that leisure time and interests tend to be permeated with work or quasi-work activities. This combines with the satisfaction derived from work role overload in such a way as to allow the professional to feel he is in control of his own destiny which is yet another variety of psychic income.

As stated previously, age and length of service are substantially related. Because these variables closely parallel each other, the discussions are somewhat similar.

LENGTH OF SERVICE

Professionals do not derive satisfaction from length of service in the sense that Gouldner (1957:283) described the difference gained by elders from junior through latent roles. Consistent with the theme of work in this discussion, it may be said that the quantity and quality of professional work during the years of service is the primary source of satisfaction. A highly non-productive professional with many years of service is likely to be dissatisfied and a causal source dissatisfaction among professional peers.

The satisfaction derived from a life time of professional work is, as age, a universal rather than a particularistic variable.

RESIDENCE

The idea that professionals are paid in order that they may work, as opposed to working to be paid, suggests that the location of work would not be a factor of great importance among professionals. Reissman's (1949:308-309) statement suggests that professionals look upon their job, and by extension, the location of that job, as only a temporary place to pursue their professional interests.

This interpretation also draws support from Wilensky's (1956) study of union intellectuals. These professionals were quite willing to change jobs, and thus residence, if the new position would allow an increase in the utilization of their professional skills.

Gouldner (1957:284-285) in describing two latent organizational identities discussed the differences between cosmopolitans and locals. Cosmopolitans are described as "those low on loyalty to the employing organization, high on commitment to specialized role skills, and likely to use an outer reference group orientation." In contrast, locals are described as "those high on loyalty to the employing organization, low on specialized role skills, and likely to use an inner reference group orientation."

The finding of this study that residence is not significantly related to professional job satisfaction suggests that members of established professions are cosmopolitans and view the location of their work as a temporary place to pursue their professional interests.

AN OVERVIEW OF PROFESSIONAL BACKGROUND CHARACTERISTICS

The educational process necessary in the socialization of members of established professions supplants the various socio-demographic variables as sources of professional job satisfaction.

The professional socialization process consists of inculcation of norms, codes, values, and other guidelines that eventually form professional attitudes and beliefs. This process allows the aspiring professional to determine whether future work will be satisfactory. If the decision is made to not seek a career, then a potentially dissatisfied professional member is lost. Those who agree to continue the process then become members of a profession with the likelihood that age will not influence their level of job satisfaction. As this study has shown, the nature of employment in a bureaucratized setting has a far greater impact on professional job satisfaction than age and other background characteristics.

The minimal impact of the socio-demographic variables on professional job satisfaction actually provides a basis

for describing members of established professions involving these variables.

Members of established professions make a decision during their training years as to whether or not to pursue the career further. The successful completion of the necessary training to enter a profession supplants non-work related variables as contributors to job satisfaction.

The centrality of work and the "psychic rewards" of work renders factors such as income, residence, and length of service to be negligible in producing differential levels of job satisfaction.

This discussion shows that an explanation of professional job satisfaction must be grounded in other than socio-demographic or background variables; data analysis has shown the alternative variables to be perceptions of bureaucracy and role conflict.

PERCEPTIONS OF BUREAUCRACY

Five dimensions of the perceived degree of bureaucratization were analyzed in this study. These dimensions are technical qualifications, procedures, division of labor, hierarchy, and impersonality.

Of these variables, only hierarchy and division of labor were found to have a statistically significant impact on job satisfaction. These variables are central to the theme of autonomy vs. integration which characterizes much

of the literature on professionals in bureaucracies. In regard to the theme of autonomy vs. integration, Kornhauser (1962:195-196) has argued that most conflict between the scientist and engineer and his employing organization stems from the basic organizational dilemma of autonomy vs. integration. These professionals must be given enough autonomy to enable them to fulfill their professional work tasks and goals, yet their activity must also contribute to the overall goals of the organization.

Scott (1966:267) has argued that the autonomy desired by professionals and the integration desired by bureaucracies leads to fundamentally conflicting models of work organization. In this regard he states:

One approach is to instill in each worker all the basic skills required for doing the work together with the norms and standards which will govern his performance. Since each worker possesses the necessary skills, he can perform the entire task independently of the efforts of his colleagues. If each worker has internalized the standards, he will apply them not only to his own work but also to that of his colleagues so that under this system performance is somewhat controlled by external surveillance. The major controls, however, are those which a worker applies to his own performance. The second alternative is to divide the task into its constituent activities and to train some workers to perform certain of these activities and others to perform different ones. Norms and standards are not internalized so that a system of rules which specifies how the work is to be done will be necessary, and some workers must be given the job of interpreting and

enforcing the rules. In addition, the rules and the supervisory officials must function to coordinate the efforts of the various workers to assure that the several activities will each contribute to the accomplishment of the assigned task.

Scott (1966:268) comments further on the theme of autonomy vs. integration in stating:

The applicability of the models to empirical phenomena in question should require little explanation or justification. Professionals are usually characterized as persons trained in professional schools, possessing complex skills and special knowledge, and equipped with internalized control mechanisms. And bureaucrats are usually thought of as relatively specialized in function and as operating in a hierarchical structure under a system of formal rules.

These statements suggest the theoretical significance of hierarchy, division of labor, and components of role conflict in explaining and predicting professional job satisfaction.

The training and socialization experiences of professionals is such that loyalty to the profession and a cosmopolitan orientation toward work contribute to their desire for autonomy. Orth (1965:141) has described the importance of professional training for the scientist or engineer employed by a bureaucratic organization, as follows:

Professional training in itself, whether it be in medicine, chemistry, or engineering, appears to predispose those who go through it to unhappiness or rebellion when faced with the administrative process as it exists

in most organizations. Scientists and engineers cannot or will not....operate at the peak of their creative potential in an atmosphere that puts pressure on them to conform to organizational requirements which they do not understand or believe necessary.

In regard to this study, two points need to be made about this statement. First, reference to unhappiness indicates the condition of low job satisfaction. Second, and most crucial here is that the organizational "atmosphere" that puts pressure on them to conform to organizational requirements needs to be explained in detail.

The division of labor and the hierarchy dimensions of perceptions of bureaucracy and the person-role conflict and inter-role dimensions of role conflict are elements of the organizational environment. These dimensions have a statistically significant impact on professional job satisfaction. The inverse relationship between hierarchy of authority and job satisfaction shows that professionals in bureaucracies can take little action, even though that action may be professionally sound, without the approval of a supervisor. When professionals are discouraged in making their own decisions and do not feel that they can act as their own boss in most matters, job satisfaction will decrease. The experience of professional training develops professional loyalties, identifications and reference groups for decisions that lie outside of the employing organization. Thus, while professionals attempt

to make autonomous decisions that may be accepted by peers, the supervisors or non-professionals attempt to interpret and dilute those decisions in the interest of the organization. This means that work done by professionals in these instances may not be completed in a manner consistent with ethics that define appropriate behavior and the professional culture that defines proper professional practice.

The fundamental conflict inherent in autonomy vs. integration contributes to low professional job satisfaction through hierarchial demands that may prompt the professional to question his ability to practice those standards defined by training while employed in an organizational setting.

The second element of the organizational atmosphere that puts pressure on professionals to conform to organization requirements is the division of labor. It would seem that professionals would derive satisfaction from practicing their crafts in a specialized manner. This would seem to be the case since the preparatory education for professionals allows the free pursuit of a specialized area of interest. The professional claim to a specialized area of expertise supports the argument for autonomy in an organization setting.

However, the manner in which specialized professional work roles are structured is a matter largely determined

by the hierarchy of the employing organization. When organizations structure professional work roles in such a way as to separate workers spatially and temporally from the overall production of goods or services, a measure of social control is gained by the organization. This social control, exercised through the hierarchy and bolstered through the division of labor, overshadows control through colleagues. Commenting on this very point Weber (1947: 58-60) has stated:

Bureaucratic authority in the modern world has, wherever it has developed in large associations....everywhere led to a weakening of the role of collegiality in effective control.

Weber (1947:402) has further stated:

Collegiality unavoidably obstructs the promptness of decisions, the consistency of policy, the clear responsibility of the individual, and ruthlessness to outsiders in combination with the maintenance of discipline within the group.

This study has demonstrated that the elaboration of a hierarchy of authority and a specialized division of labor enhance the efforts of organizations to integrate professionals into bureaucratic structures and promote organizational loyalty. This process leads to low job satisfaction among professionals by making it difficult for professionals to maintain identification with professional points of reference. The locus of social control is further shifted from colleagues to the organization through the

division of labor and the fragmentation of professional work roles. This fragmentation leaves professionals without an overall image of their work and contributions, which in turn leads to low levels of job satisfaction.

On the basis of this study the dimensions of technical qualifications, procedures, and impersonality of perceptions of bureaucracy are not elements that effect job satisfaction among professionals.

The spatial and temporal separation of professional work roles through the division of labor renders it difficult for professionals to judge the extent of the requirements for technical qualifications in other specialized work roles. In this manner professionals may be unaware of the requirements in hiring and promotion across all specialized areas and throughout the organization.

In regard to the dimension of impersonality, the data support the conclusion that because of the unavoidable hierarchy and division of labor, impersonality is an expected organizational attribute. The matter of fact nature of impersonality is not sought under adverse organizational conditions and thus does not contribute to differential levels of professional job satisfaction. The lack of a statistically significant relationship between organizational procedures and job satisfaction

suggests that following procedures is a fact of organizational life. It is, however, possible that dissatisfaction with organizational procedure is expressed in dissatisfaction with the organizational hierarchy.

PERCEPTIONS OF ROLE CONFLICT

Person-role conflict, inter-sender conflict and role overload were all found to significantly relate to professional job satisfaction. The positive relationship between role overload and job satisfaction was discussed in conjunction with professional income.

The dimensions of person-role conflict and inter-sender conflict can be treated as consequences of the division of labor. In the case of person-role conflict the division of labor is the source of role requirements that violate the needs, values, or capacities of focal persons. The division of labor is also the source of expectations from a particular sender that are in conflict with those of one or more other senders.

The conflict that results from role requirements that violate the needs, values, or capacities of professionals are a result of values internalized during the period of professional training and socialization. Such role requirements place pressure on professionals to dilute their values and standards or actively resist such pressure. When professionals are placed in a position

that requires them to sacrifice personal principles, do work that, on the basis of knowledge in the field, is unnecessary, or do things that should be done differently from a professional point of view, job satisfaction decreases significantly.

The dimension of inter-sender conflict is also a consequence of the division of labor. The presence of a specialized division of labor in an organization requires multiple work task groups. The required tasks in each group are supported by rules and procedure that are necessarily different from those of other specialized work groups. Cooperation between such groups is a necessary mode of integrating such groups into the total organizational structure. Professionals experience low job satisfaction because of conflict arising from specialized rules and procedures of groups upon which they depend to satisfactorily complete their tasks.

The satisfactory completion of work tasks may require that professionals buck rules and policies. While some satisfaction may be derived from successfully completing a task, job dissatisfaction results from the necessity of deviance in completing work tasks. In this instance organizational structure is not compatible with work role expectations because of the necessity of differential rules across professional work groups coupled with the

necessity of inter-group cooperation in promoting organizational efficiency.

Since no work group is absolutely autonomous, a specialized division of labor results in multiple demands on work groups from other work groups. Such a structural condition makes it possible for incompatible demands from two or more groups to be made on a professional. This experience also contributes to low job satisfaction among professionals. This is simply a case where the division of labor and organizational structure pits professionals against one another. This condition is not conducive to maintaining a professional identity and most certainly does not promote professional solidarity. Such a condition does not promote cooperation among professionals and therefore leads to low job satisfaction.

The role conflict described thus far makes it impossible for a professional decision to be accepted by other colleagues and organization officials. This is explained in that many decisions are work task-specific and are therefore not compatible with other specialized work tasks and groups. Thus, when professionals find themselves "between a rock and a hard place" in organizations, job satisfaction may be expected to decline significantly.

The professional sample in this study receives proper help and adequate resources to execute assignments. Thus

intra-sender conflict does not have a significant impact on job satisfaction.

SUMMARY

The elaboration of a hierarchy of authority, the division of labor, person-role conflict, inter-sender conflict, and work role overload have a significant impact on professional job satisfaction. The commonality of these variables is expressed in the concept of the professional occupational environment. This study has focused on the conflict between professionals and bureaucracies that produce differential degrees of job satisfaction.

Members of established professions have considerable expertise in their fields and attempt to maintain professional identification and autonomy. Such a professional orientation is obtained through demanding training and socialization that is usually academic. The expertise and desire for autonomy achieved by this training leads to the expectation that professionals be free to make their own decisions. The hierarchies of employing organizations create a division of labor that dilutes expertise and opportunities for professionals to make their own decisions. It is this point that explains much of the degree of job satisfaction reported by professionals in this study.

It is necessary to summarize the explanations as to why certain independent variables had a non-significant

impact on job satisfaction. It was argued that the educational process supplants any impact the age, education, income, length of service, and residence might have on job satisfaction. It was argued the non-significant impact of age on job satisfaction could be explained by organizations emphasizing universalistic rather than particularistic standards of professional work and evaluation. It was further argued that work among professionals is assigned on the basis of technical expertise and demonstrated qualifications. Thus, age does not determine work assignments and does not determine satisfaction derived from that work.

The inability of income to explain job satisfaction is attributed to the dictum that professionals do not work in order to be paid, but are paid in order to work. It was further argued that work rather than income is a central life interest among professionals. This argument was bolstered by the finding that work role overload had a significant impact on job satisfaction.

The non-significant impact of length of service on job satisfaction was explained by the observation that professionals gain satisfaction from the quantity and quality of their contributions. Satisfaction is not derived from merely being a member of a profession for a length of time. The satisfaction derived from work role overload also bolsters this argument.

The relative unimportance of residence in explaining

job satisfaction was viewed as an outcome of a cosmopolitan work orientation. This interpretation is suggested by the dictum that professionals are paid in order to work as opposed to working to be paid. The centrality of work suggests that professionals look upon their job, and by extension the location of that job, as a temporary place to pursue their professional interests.

Of the dimensions of perceptions of bureaucracy, technical qualifications, impersonality, and procedures failed to have a significant impact on job satisfaction.

It was argued that the spatial and temporal separation of professional work roles through the division of labor renders it difficult for professionals to judge the extent of the requirements for technical qualifications in other work roles. It was further argued that professionals may be unaware of the requirements in hiring and promotion across all specialized areas throughout the organization.

Organizational impersonality was treated as an attribute. This attribute results in the elaboration of organizational hierarchies and the division of labor. It was further argued that the matter of fact nature of impersonality disposes professionals not to seek informal relations under adverse organizational conditions that foster impersonality.

The lack of a statistically significant relationship between organizational procedures and job satisfaction was explained through the notion that following procedures is an attribute of organization life. This finding also suggests that, at least to some extent, organizational procedures are acceptable and thus do not contribute to differential job satisfaction. However, it was noted that dissatisfaction with organizational procedures could be expressed in dissatisfaction with the organizational hierarchy.

Finally, the intra-sender dimension of role conflict centers on proper help and adequate resources to execute work assignments. The negligible impact of intra-sender conflict on job satisfaction supports the conclusion that professionals, at least in this sample, are not dissatisfied with the amount and kind of resources they receive to carry out their work roles.

This study has not argued that professionals are altruistic or egotistic. While professionals may be concerned with income, it is not the sole motivation to work. The psychological rewards of work that are measured in maintaining and expanding knowledge and gaining the respect and esteem of colleagues is more important in job satisfaction. The control over professionals, the dilution of self-discipline, in part prevents professional

achievement and maximum satisfaction.

The condition of low professional job satisfaction stifles creativity, innovation, and program change within the employing organizations. The ability of professionals to expand knowledge and provide services to their fellow man is in part dependent on job satisfaction.

Members of established professions are employed in bureaucracies that contribute to stable and predictable patterns of social organization. Such bureaucracies are ideally structured to accommodate as well as promote social change. Those bureaucratic structures that comprise professional job satisfaction by extension comprise the ability of society to profit from professional expertise, research and knowledge.

SUGGESTIONS FOR FUTURE RESEARCH

This study did not measure the degree of professionalism exhibited by the respondents. Such a measure would refine the general concept of professional as used in this study. Future research relating professionalism to job satisfaction should prove useful in understanding and predicting professional job satisfaction.

Future research on professional job satisfaction would profit from maximizing the ranges of age, income, education, length of service, and residence in the samples chosen for study. This is clearly necessary in deter-

mining the impact of these variables on job satisfaction.

It is further suggested that the dimensions of bureaucracy, as used in this study, continue to be used in research of this type. Although the dimensions of technical qualifications, procedures and impersonality showed a negligible impact on job satisfaction, this may not be the case for other professional groups. Future research will be useful in determining the utility of these dimensions.

With the exception of intra-sender conflict, the remaining dimensions of the role conflict scale had a statistically significant impact on job satisfaction. Consideration should be given to developing additional items that measure inter-sender conflict. Valid additions should increase the reliability of this dimension.

In order to determine return bias, future research will profit by recording the date of questionnaire return and utilizing the resulting ordinal data rather than dichotomizing the data as was done in this study.

The continued exploration of work related variables, as suggested by Kornhauser (1962) as opposed to background variables, as suggested by Blauner (1964), should improve the ability to explain and predict professional job satisfaction. Future research should profit by exploring the impact of such work-related variables as

commitment, security autonomy, client relations, and sense of purpose and accomplishment on professional job satisfaction.

Finally, longitudinal research is clearly needed to document the changing nature of professional job satisfaction within organizational settings.

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APPENDIX A

SUMMARY OF OCCUPATIONS AND
PROFESSIONS IN THE LITERATURE REVIEW

Bureaucracy and Job Satisfaction

<u>Author</u>	<u>Occupation/Profession</u>
Reissman (1949)	Mid-level Civil Service Workers
Blauner (1964)	Factory Workers
Sorenson and Sorenson (1974)	Certified Accountants
Miller (1970)	Public School Teachers
Argyris (1960)	
McGregor (1960)	Theoretical Management
Likert (1961)	Theoretical Management
Weber (1947)	Theoretical Perspective
Parsons (1951)	Theoretical Discussion
Sills (1957)	March of Dimes Foundation
Blau (1955)	Public Bureaucracies
Worthy (1950)	Retail Personnel
March and Simon (1958)	
Snizek, et al. (1976)	Park and Forest Rangers
Compton (1976)	Park and Forest Rangers
Miller (1967)	Aerospace Scientists and Engineers
Kornhauser (1962)	Scientists in Industry
Corwin (1961)	Professional Nurses
Gouldner (1957)	Liberal Arts College Faculty Members
Blau and Scott (1962)	Professional Social Workers

Role Conflict

Gross, et al. (1958)	Theoretical
Miles (1975)	Government Missile Research and Development Personnel
Hamner and Tosi (1974)	High Level Managers
Newcomb, et al. (1965)	General

Age and Job Satisfaction

Hoppock (1960)	Longitudinal Study of Multiple Occupations
Smith (1955)	Factory Workers
Rosenfield and Owens (1965)	Manufacturing Workers

AuthorOccupation/Profession

Income and Job Satisfaction

Hoppock (1935)	Follow-up Study of Liberal Arts Graduates
Miller (1940)	
Katz (1949)	Follow-up Study on Liberal Arts Graduates
Inlow (1951)	White Collar Workers
Morse (1953)	White Collar Workers
Ash (1954)	Maintenance, Clerical, Supervisory, Sales Personnel
Hulen and Smith (1965)	Female Factory Workers
Lawler and Porter (1963)	Corporate Managers
Smith and Kendall (1963)	Head Nurses

Education and Job Satisfaction

American Vocational Association (1948)	Home Economics Teachers
Kessler (1954)	Rehabilitated Veterans
Scott and Hayes (1921)	Retarded, Unskilled, Semi-skilled Industrial Workers
Ash (1954)	Steel Workers
Quayle (1935)	Stenographers
Kornhauser and Sharp (1935)	Female Factory Workers
Fryer (1926)	Sample of Unemployed
Centers and Cantril (1971)	Middle Managers
Scott and Hayes (1971)	Workers in Routinized Factory Tasks
Klein and Maher (1966)	First Level Managers in the Electronics Industry

Length of Service and Job Satisfaction

American Vocational Association (1948)	Home Economics Teachers
Chase (1951)	High School Teachers
Harris (1949)	Industrial Workers

Residence and Job Satisfaction

Worthy (1950)	Retail Personnel
Habbe (1947)	Insurance Agents
Katzell, Barnett, Parker (1961)	Female Factory Workers
Turner and Lawrence (1965)	Industrial Factory Workers
Hulen and Blood (1968)	Summary Study of the Literature
Susman (1973)	Workers in Process Industries

NATIONAL SURVEY OF
FISHERIES RELATED OCCUPATIONS

Instructions

Included in this booklet are a number of short questions requiring, for the most part, no more than a check (✓) mark. Please be as candid as possible in answering these questions. Apart from the initial background questions, there are no right or wrong answers to the questions that are asked. Instead, we are simply asking, in many instances, for your opinion.

Be assured that all answers will be kept in strictest confidence, and that your answers will be merged with those of others so as to get a total picture of the fisheries profession.

This booklet is divided into a number of sections. Each section may be answered individually in order to use available portions of your time. After completing all sections in this booklet, please return the completed booklet in the self-addressed, stamped envelope which accompanies the booklet.

Thank you

Should you desire a copy of the study's results, please check (✓) the box appearing at the left.

GENERAL BACKGROUND INFORMATION

1. Job Title (as specific as possible) _____

2. Employing organization and branch (if applicable) _____

3. Job description--check the categories which best describe the kind of work your job requires you to do most of the time.

- _____ research in fisheries-related fields
 _____ management of fish populations
 _____ fish culture--raising fish for stock, bait or market
 _____ administration of fisheries related agencies and organizations
 _____ consultant for commercial fisheries
 _____ consultant for non-commercial fisheries
 _____ teaching in college and university
 _____ student in fisheries related curriculum
 _____ other _____

(please specify)

4. Age at last birthday _____

5. Education -- Check all that apply and specify fields of study for degrees that you hold.

- _____ Ph.D. specify field: _____
 _____ M.A./M.S. + hours toward Ph.D.
 _____ M.A./M.S. specify field: _____
 _____ B.A./B.S. + hours toward Masters
 _____ B.A./B.S. specify field: _____
 _____ Some college credits, no degree
 _____ A.A./A.S./2 yr. technical specify field: _____
 _____ High school diploma
 _____ Some high school
 _____ Eight years or less

6. Present marital status (check one)

_____ single--never married

6. Present marital status (check one) (cont'd.)

- single--divorced or separated
 single--widowed
 married--previously divorced, widowed
 married--no previous marriage

7. Past residence size: What would you estimate the population to have been of the community in which you spent most of your time growing up? (Check one)

- | | |
|---|---|
| <input type="checkbox"/> Open country | <input type="checkbox"/> Large town, 5000-9999 |
| <input type="checkbox"/> Small village, less than or equal to 999 | <input type="checkbox"/> Small city, 10,000-49,999 |
| <input type="checkbox"/> Large village, 1000-2499 | <input type="checkbox"/> Large city, 50,000-99,999 |
| <input type="checkbox"/> Small town, 2500-4999 | <input type="checkbox"/> Metropolitan area of 100,000 or more |

8. Present Residence Size: What would you estimate the population of the community to be in which you are currently living? (Check one)

- | | |
|---|---|
| <input type="checkbox"/> Open country | <input type="checkbox"/> Large town, 5000-9999 |
| <input type="checkbox"/> Small village, less than or equal to 999 | <input type="checkbox"/> Small city, 10,000-49,999 |
| <input type="checkbox"/> Large village, 1000-2499 | <input type="checkbox"/> Large city, 50,000-99,999 |
| <input type="checkbox"/> Small town, 2500-4999 | <input type="checkbox"/> Metropolitan area of 100,000 or more |

9. Father's education -- Check all that apply and specify field of study for degree.

- Ph.D. specify field: _____
 M.A./M.S. + hours toward Ph.D.
 M.A./M.S. specify field: _____
 B.A./B.S. + hours toward masters
 B.A./B.S. specify field: _____
 Some college credits, no degree
 A.A./A.S./2 yr. technical specify field: _____
 High school diploma
 Some high school
 Eight years or less

10. Mother's education -- Check all that apply and specify fields of study for degree.

Ph.D. specify field: _____
 M.A./M.S. + hours toward Ph.D. _____
 M.A./M.S. specify field: _____
 B.A./B.S. + hours toward masters _____
 B.A./B.S. specify field: _____
 Some college credits, no degree _____
 A.A./A.S./2 yr. technical specify field: _____
 High school diploma _____
 Some high school _____
 Eight years or less _____

11. Father's occupation for the major portion of his life. Please be as specific as possible. _____

12. Mother's occupation for the major portion of her life. Please be as specific as possible. _____

13. Military experience (Check one)

none (go to Question 16)
 army
 navy
 air force
 coast guard
 marines
 national guard

14. Number of years of active military service _____

15. Highest military rank _____

16. In general, which political party do you like best?

Democratic
 Republican
 Independent
 Other (Specify) _____

17. What was your approximate family income from all sources, before taxes, in 1975.

_____ \$10,000 and under	_____ \$30,000 to \$40,000
_____ \$10,000 to \$15,000	_____ \$40,000 to \$50,000
_____ \$15,000 to \$20,000	_____ \$50,000 to \$75,000
_____ \$20,000 to \$25,000	_____ \$75,000 to \$100,000
_____ \$25,000 to \$30,000	_____ \$100,000 and over

GENERAL JOB SATISFACTION

Some jobs are more interesting and satisfying than others. We want to know how you feel about your job. Please read the statements found below and circle either "Strongly agree," "Agree," "Undecided," "Disagree," etc., depending on how you feel about your present job. There are no right or wrong answers. We would simply like your honest opinions on each one of the statements.

	<u>Strongly</u> <u>Agree</u>	<u>Agree</u>	<u>Undecided</u>	<u>Disagree</u>	<u>Strongly</u> <u>Disagree</u>
1. My job is like a hobby to me.	SA	A	U	D	SD
2. My job is usually interesting enough to keep me from getting bored.	SA	A	U	D	SD
3. It seems that my friends are more interested in their jobs.	SA	A	U	D	SD
4. I consider my job rather pleasant.	SA	A	U	D	SD
5. I enjoy my work more than my leisure time.	SA	A	U	D	SD
6. I am often bored with my job.	SA	A	U	D	SD
7. I feel fairly satisfied with my job.	SA	A	U	D	SD
8. Most of the time I have to force myself to go to work.	SA	A	U	D	SD
9. I am most satisfied with my job for the time being.	SA	A	U	D	SD

	<u>Strongly</u> <u>Agree</u>	<u>Agree</u>	<u>Undecided</u>	<u>Disagree</u>	<u>Strongly</u> <u>Disagree</u>
10. I feel that my job is no more interesting than others I could get.	SA	A	U	D	SD
11. I definitely dislike my work.	SA	A	U	D	SD
12. I feel that I am happier in my work than most other people.	SA	A	U	D	SD
13. Most days I am enthusiastic about my work.	SA	A	U	D	SD
14. Each day of work seems like it will never end.	SA	A	U	D	SD
15. I like my job better than the average worker does.	SA	A	U	D	SD
16. My job is pretty uninteresting.	SA	A	U	D	SD
17. I find enjoyment in my work.	SA	A	U	D	SD
18. I am disappointed that I ever took this job.	SA	A	U	D	SD

PROFESSIONAL TRAINING

1. Have you been certified as a fisheries-scientist or fisheries-biologist by the American Fisheries Society? (check one)
 - yes
 - no (go to Question 3)

2. At what age did you receive AFS certification?
 - years old

3. Would you classify yourself as a fisheries-biologist?
 - yes
 - no (go to Question 6)

4. How long (to the nearest year) have you been a fisheries-biologist? Years

5. How old were you when you made the decision to become a fisheries-biologist? Years old

6. Although some formal training is necessary to obtain the position which you have, how useful has this training been to your performance in the job which you now have? (Check one)
 - great use
 - some use
 - very little use
 - no use at all

7. To what extent has further formal training been encouraged by your employer? (Check one)
 - greatly encouraged
 - somewhat encouraged
 - very little encouragement
 - no encouragement at all

8. In comparison to your formal training, how useful has on-the-job training been to your performance in the job which you now have? (Check one)

more useful
 about the same
 less useful

9. In comparison to your formal training how useful has your superior been to your performance in the job which you now have?

more useful
 about the same
 less useful

10. In comparison to your formal training, how useful have your co-workers or colleagues been to your performance in the job which you now have?

more useful
 about the same
 less useful

11. If you have military experience, how useful has it been to your performance in the job you now have, in comparison to your formal education?

more useful
 about the same
 less useful

Commerical Fisher-
man (con'td.)

	<u>Very High</u>	<u>High</u>	<u>Medium</u>	<u>Low</u>	<u>Very Low</u>	<u>Not Certain</u>
c. Prestige	_____	_____	_____	_____	_____	_____
d. Functional Importance	_____	_____	_____	_____	_____	_____
e. Psychological Reward	_____	_____	_____	_____	_____	_____
8. Veterinarian						
a. Economic Rewards	_____	_____	_____	_____	_____	_____
b. Authority	_____	_____	_____	_____	_____	_____
c. Prestige	_____	_____	_____	_____	_____	_____
d. Functional Importance	_____	_____	_____	_____	_____	_____
e. Psychological Reward	_____	_____	_____	_____	_____	_____
9. Next highest position above your own						
a. Economic Rewards	_____	_____	_____	_____	_____	_____
b. Authority	_____	_____	_____	_____	_____	_____
c. Prestige	_____	_____	_____	_____	_____	_____
d. Functional Importance	_____	_____	_____	_____	_____	_____
e. Psychological Reward	_____	_____	_____	_____	_____	_____

What job title is associated with the "position above your own" which you made reference to in Question 9? _____

ORGANIZATIONAL INVENTORY

This next portion of the questionnaire consists of a series of statements about organizations. The purpose of this phase of the study is to find out how accurately these statements describe conditions and situations in organizations or divisions of the organization in which you work. Obviously, there are no "right or wrong" answers for these items. Rather, we would appreciate your indicating how well each statement describes your own organization or division. If it describes your organization Very Well (VW), circle that response. If one of the other alternatives, Well (W), Poorly (P), Very Poorly (VP), or Undecided (U), is more accurate it should be circled.

	<u>Very Well</u>	<u>Well</u>	<u>Undecided</u>	<u>Poorly</u>	<u>Very Poorly</u>
1. One thing people like around here is the variety of work they get to do.	VW	W	U	P	VP
2. Standard procedures are to be followed in almost all situations.	VW	W	U	P	VP
3. The organization stresses following the established procedures.	VW	W	U	P	VP
4. The organization is always sponsoring employee get-togethers.	VW	W	U	P	VP
5. Many people seem to be hired simply because they are attractive in appearance.	VW	W	U	P	VP
6. There can be little action until a supervisor approves a decision.	VW	W	U	P	VP

	<u>Very Well</u>	<u>Well</u>	<u>Undecided</u>	<u>Poorly</u>	<u>Very Poorly</u>
7. We are to follow strict operating procedures at all times.	VW	W	U	P	VP
8. A person gets the chance to develop good friends here.	VW	W	U	P	VP
9. People here are given raises according to how well they are liked rather than how well they do their job.	VW	W	U	P	VP
10. There is something new and different to do almost every day.	VW	W	U	P	VP
11. A very friendly atmosphere is evident to everyone who works here.	VW	W	U	P	VP
12. There is little chance for a promotion unless you are "in" with the boss.	VW	W	U	P	VP
13. Most jobs in this organization involve a variety of different kinds of activities.	VW	W	U	P	VP
14. A person who likes to make his/her own decisions would become discouraged here.	VW	W	U	P	VP
15. I feel that I can act as my own boss in most matters.	VW	W	U	P	VP

OCCUPATIONAL CONCERNS

Below is a list of statements that concern a person's job. Please read each statement and indicate the extent to which you agree by circling either "Strongly Agree," "Agree," "Undecided," "Disagree," or "Strongly Disagree."

	<u>Strongly</u> <u>Agree</u>	<u>Agree</u>	<u>Undecided</u>	<u>Disagree</u>	<u>Strongly</u> <u>Disagree</u>
1. I have to do things that should be done differently.	SA	A	U	D	SD
2. I have to work on unnecessary things.	SA	A	U	D	SD
3. I have to do things that are against my personal principles.	SA	A	U	D	SD
4. I receive assignments without the proper help to complete them.	SA	A	U	D	SD
5. I receive assignments without adequate resources and materials to execute them.	SA	A	U	D	SD
6. I work with two or more groups who operate quite differently.	SA	A	U	D	SD
7. I have to buck a rule or policy in order to carry out an assignment.	SA	A	U	D	SD
8. I receive incompatible requests from two or more people.	SA	A	U	D	SD

	<u>Strongly</u> <u>Agree</u>	<u>Agree</u>	<u>Undecided</u>	<u>Disagree</u>	<u>Strongly</u> <u>Disagree</u>
9. I do things that are apt to be accepted by one and not accepted by others.	SA	A	U	D	SD
10. I frequently have much more to do than I can handle during the available time at work.	SA	A	U	D	SD

Dear AFS Member:

We are conducting a nation-wide survey of various occupations in the fisheries field. A few weeks ago we sent you a short questionnaire with return envelope, which contained questions relative to your occupation. As of the date of this mailing, we have yet to receive your questionnaire. In order for our conclusions to be accurate we need a representative sample. Thus, your questionnaire is very important.

We would appreciate it if you would fill out the questionnaire and return it as soon as possible.

Thanking you, I am,

Sincerely,
Steven K. Paulson
Study Director

APPENDIX D

Dear AFS member:

The Department of Sociology at Virginia Polytechnic Institute and State University, in cooperation with the Virginia Agricultural Experiment Station, is conducting a nation-wide project dealing with various aspects of the profession of fisheries-biologists. We are particularly interested in the opinions of informed professionals concerning formal training necessary for the profession, the types of work performed, and an evaluation of the general level of job satisfaction of the profession as a whole.

We would very much appreciate it if you would take a few minutes and complete the enclosed questionnaire for our study. An addressed return envelope is included for your convenience--no postage is needed.

Please feel free to make any additional comments you would care to on the questionnaire. It is not necessary that your name be included as complete anonymity is assured all of our respondents. You will, however, notice a number on the questionnaire. This number will allow us to cross your name off our list when we receive your questionnaire and to follow-up on those who do not respond.

Once the data have been tabulated, we would be most happy to make them available to you or other interested persons involved in the fisheries-biology field. Your cooperation is very much appreciated.

Sincerely,

Steven K. Paulson
Study Director

(703) 951-5341

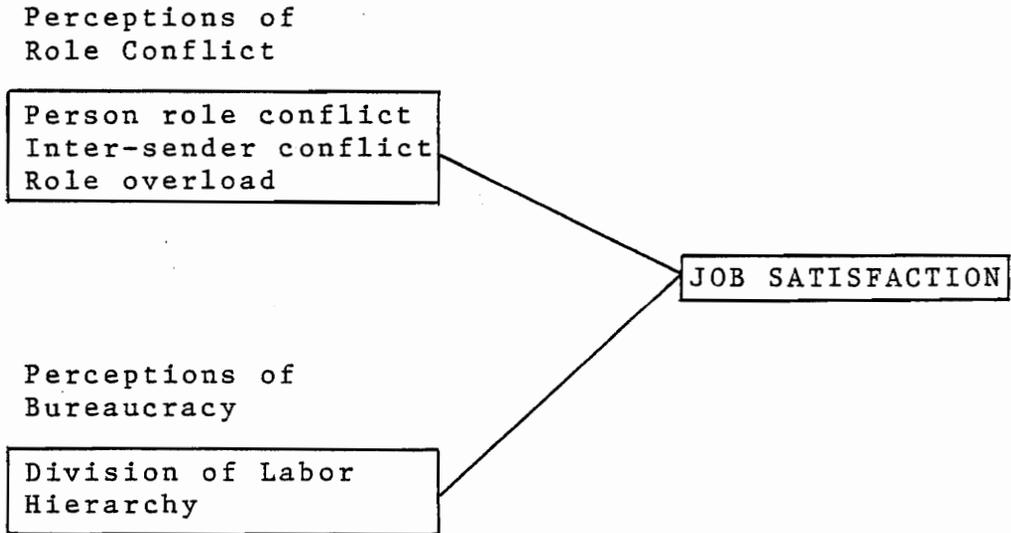
APPENDIX E

CELL FREQUENCIES USED TO COMPUTE χ^2 VALUES

Variable	Time of Return				χ^2
	Hi Level of	Early (N) %	Late (N) %		
Age	(133)	49.6	(21)	53.8	.1030
Income	(167)	62.3	(18)	46.2	.0004
Education	(168)	62.7	(28)	71.8	.8608
Length of Service	(125)	46.6	(19)	48.7	.0050
Residence	(135)	50.4	(19)	48.7	3.068*
Bureaucracy	(129)	48.1	(17)	43.6	.1291
<u>Dimensions</u>					
Technical Qualifications	(132)	49.3	(17)	43.6	.2399
Procedures	(123)	45.9	(18)	46.2	.0017
Division of Labor	(107)	39.9	(14)	35.9	.0933
Hierarchy	(138)	51.5	(19)	48.7	.0232
Impersonality	(157)	58.6	(24)	61.5	.0311
Role Conflict	(16)	6.0	(3)	7.7	.0037
<u>Dimensions</u>					
Person-role Conflict	(122)	45.5	(22)	56.4	1.212
Intra-sender Conflict	(127)	47.4	(23)	59.0	1.394
Inter-sender Conflict	(113)	42.2	(26)	66.7	7.290*
Work-role Overload	(181)	67.5	(31)	79.5	1.750*
Job Satisfaction	(129)	48.1	(17)	43.6	.1291

*Significant χ^2 at $\alpha = .20$ degrees of Freedom = 1.

APPENDIX F
A REVISED VERSION
OF THE PREDICTIVE MODEL*



*This revised model is comprised of those variables that are significant at the .001 level of statistical probability.

VITA

Name: Thomas Patrick Thompson

Date of Birth: March 30, 1947

Place of Birth: Fairmont, West Virginia

Educational Background:

1965 G.E.D., U.S.A.F.I, Stuttgart, West
Germany

1972 Graduated from Fairmont State College,
Fairmont, West Virginia
B.A. degree in Sociology

1973 Graduated from West Virginia University,
Morgantown, West Virginia. M.A.
degree in Sociology. Title of
Master's Thesis: "I have an uncle
in Canada: A study of the Careers
of 28 Dutch emigrants"

Thomas P. Thompson

A FORMULATION AND TEST OF A MULTIVARIATE
PREDICTIVE MODEL OF PROFESSIONAL JOB SATISFACTION

by

Thomas Patrick Thompson

(ABSTRACT)

This study represents an attempt to develop a multivariate predictive model of professional job satisfaction. The model consists of socio-demographic work related, role conflict and bureaucratic variables. Multiple correlation and regression techniques are used in the data analysis. The sample consists of 308 professional fisheries biologists who were members of the American Fisheries Society in 1974.

The predictive model tested in this study was comprised of 14 independent variables related to social and demographic characteristics, role conflict and bureaucratic characteristics.

The results of this Study show that age, income, education, length of service and residence have a negligible impact on job satisfaction, Person-role conflict, intra-sender conflict, inter-sender conflict, and role overload comprise role conflict. These variables jointly explain 18 percent of variance in job satisfaction.

A multidimensional measure of perceptions of bureaucracy including technical qualifications, procedures, division of labor, hierarchy, and impersonality jointly explain 26 percent of the variance in job satisfaction.