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CASE OF PUBLIC HEALTH IN MICHIGAN.

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1976

INNOVATION IN LOCAL PUBLIC BUREAUCRACIES:
THE CASE OF PUBLIC HEALTH IN MICHIGAN

By

Gary Raymond Rassel

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ABSTRACT

INNOVATION IN LOCAL PUBLIC BUREAUCRACIES: THE CASE OF PUBLIC HEALTH IN MICHIGAN

By

Gary Raymond Rassel

The determination of characteristics of organizations and administrators which are correlated with innovation in public bureaucracies is the major purpose of this study. A theory which assumes rationality on the part of all participants is used to develop hypotheses. An ambition theory of administration is developed from literature in political science and related fields.

This theory is a type of economic theory of organizations which makes assumptions about and focuses on individuals to predict bureau behavior. Two major sources form the basis of the theoretical framework for the study. The theory discussed by Anthony Downs in Inside Bureaucracy is integrated with assumptions and findings from the ambition theory literature in elective politics. Both of these approaches focus on the career ambitions of individuals to predict their behavior. Downs uses the assumptions to predict how bureaus will behave in the aggregate as well as to predict the behavior of particular types of bureaucrats. Ambition theory predicts the behavior of politicians based their career goals. Two types of

ambition are suggested for the bureaucrats in the study. Climber ambition is possessed by those who seek more prestigious and well paying positions. Conserver ambition is that held by those who wish to maintain a less prestigious but less demanding occupational position.

Program innovation in local public health departments in Michigan is the dependent variable. Data was gathered from these health departments, their directors and deputy directors. Organizational correlates of innovation are hypothesized. The ambition of the administrators and their backgrounds are also hypothesized to be related to each other and to the innovation of the public health department. One set of hypotheses relates characteristics of the health directors to their likely ambitions and suggests the type of department in which each is likely to be found.

Several characteristics of organizations associated with large size were found to be related to higher rates of innovation in these public health departments. Resources, the size of the department's budget, was concluded to be the most important of these. Resources enabled the department to hire personnel in a greater number of specialized program areas permitting the department to innovate. The ages, types of training, and careers of the health administrators were found to be related to ambition. Younger directors with less experience in private practice are more likely to have higher aspirations--climber ambitions--and are more likely to be in innovative departments than are older directors with lengthier private practice experience.

Multivariate models including departmental resources, director background, director ambitions, and innovation are developed. The relationships among these variables are analyzed and the manner in which they relate to innovation is specified. The importance of ambition theory to administrative and political leadership and policy development is suggested.

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Two other individuals have been particularly helpful. Mr. Roy Manty of the Bureau of Local Health Administration of the Michigan Department of Public Health has been most generous in providing advice and access to department records which have been very valuable. He has also given generously of his time and has been very supportive of my efforts. A colleague, Dr. Harold E. Old, Jr., also of the Michigan Department of Public Health, helped to sharpen the theory and the analysis in many ways by being a good listener and friendly critic.

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CHAPTER I

INNOVATION AND AMBITION: REVIEW OF THE LITERATURE

Introduction

The main concern of this dissertation is to apply a theory of bureaucratic decision-making to a type of organizational behavior, innovation. The theory used is a type of economic theory of organizations which makes assumptions about and focuses on individuals to predict bureau behavior. The class of organizations chosen for analysis are local and district departments of public health in the state of Michigan. I focus on the adoption of new public health programs as the measure of innovation.

Ideas from ambition theory in elective politics are integrated with those from Anthony Downs' Inside Bureaucracy.¹ Since the theory is used to suggest that the innovation of the departments is determined in part by the directors in those departments, I test hypotheses about these individuals. This set of hypotheses identifies those individuals as to the type of ambition they are likely to have and suggests the characteristics of the organizations in which each ambition type is most likely to be found. I also investigate the relationships between organizational characteristics and innovation. A more complete model is suggested which includes individual as well as organizational variables and relationships linking the elements of this model are analyzed.

Innovation

Innovation as a topic and a concept has been dealt with considerably in the behavioral sciences in recent years. Studies investigating the diffusion of innovations among individuals and organizations are quite numerous while other approaches have looked at correlates of innovation among individuals and organizations. Among these are two studies dealing explicitly with innovation in public health.² Although public health organizations as public bureaucracies differ from business and industrial firms, the characteristics of business firms which have been found to be correlated with innovation, such as size, resources, and professionalism, have also been found to correlate with innovation in public bureaucracies.

Considerable variation exists in the number of non-traditional health care programs adopted from one department to another and in the amount of resources allocated to these programs. Some departments are quick to adopt and implement new programs which are advocated by health professionals while other departments are slow to begin even required programs. If we look at any change in policy as innovation, then the relevance of the study of innovation for policy development and implementation is great. This dissertation, however, focuses on a narrower range of policy, the adoption of new programs in public health. Drawing from Anthony Downs' Inside Bureaucracy, I apply a variant of his theory to an empirical situation.

The term innovation has been used in so many different ways that its meaning can appear quite ambiguous. For this reason it is important to specify how I will use the concept and how it differs from other usages. Innovation will be defined here as the degree to which an individual or organization adopts new ideas or practices earlier than other members in his or its social system. This is probably the most common usage of the term although alternative and less inclusive definitions have been offered.³ Thompson defines innovation as "the generation, acceptance, and implementation of new ideas, processes, and products or services."⁴ This implies that the organization or individual is involved also in the creation of the idea or process. Various degrees of innovation may exist, from a capacity to adopt the good ideas of others to the ability to generate and adopt one's own new ideas.⁵

It is important to separate the concept of innovation from that of invention. Invention implies bringing something new into being; innovation implies bringing something new into use. This distinction is particularly important in researching organizations for we are interested at times in whether an organization can create something new for its own use or for sale, exploitation, or use by others, and at times in whether an organization can successfully adopt goals, processes or policies that are new to that organization.⁶ Most practices which are new to local public health departments are innovations in the sense that they have been developed elsewhere and are considered for adoption by the local departments. Although occasionally the term 'innovative' is used to refer to what is more

generally called 'inventive,' adoption is usually an important aspect of definitions of innovation.⁷

Rogers proposes a definition of innovation which is essentially the same as the one suggested for this dissertation.⁸ A less inclusive definition of innovation that has been offered is the one by Mohr: "the successful introduction into an applied situation of means or ends that are new to that situation."⁹ This definition focuses on adoption or utilization of new practices rather than on invention. However, it requires a more thorough specification of what is a successful introduction.

Innovation can also be defined in terms of system or organizational change. Organizational development often refers to a change in the properties of an organization and the relationships among these properties.¹⁰ Hage and Aiken investigate innovation by relating rates of program change, or adoption, to changes in organizational characteristics such as decision-making, job description, and the job satisfaction of employees. The measure of rates of change is their measure of innovation. They discuss the difference between program adoption and change in organizational properties as the change within a system as opposed to the change of a system.¹¹ Parsons makes a similar distinction.¹² Changes of a system are not considered innovation by Hage and Aiken and the definition given earlier for this study omits them as well.

These authors suggest looking at changes in the system rather than the adoption of practices or technologies. In this sense, many organizational and social changes amount to new ways

of doing things. Structural changes in organizations, if deliberately made, are expected to change relationships among the members of the organization and result in system wide changes. Organizational change may be slow and also non-deliberate. Gradual changes in organizational properties and the relationships among them may take place over time and may greatly affect individuals in the organizations. Ordinarily, though, these changes would not be termed innovation. However, changes in the configuration of organizational properties may favor the adoption of innovations.¹³ The definition of innovation to be used in this dissertation excludes changes of a system as innovation and is concerned only with the deliberate adoption of programs.

With few exceptions, innovation studies are cross-sectional and not longitudinal. In order to draw inferences as to cause and effect among variables involved, time series studies are necessary. Hage and Aiken measured the rate of program change over a five year period but related this rate to other organizational properties which were measured cross-sectionally only.¹⁴ To demonstrate more conclusively that changes in organizational properties, i.e. changes in a system, led to innovation, longitudinal studies would be necessary.

Most studies of innovation focus on a single point in time, mainly the time of adoption or application of an innovation. Some studies do broaden this to look at the process of adoption and trace the extent to which a practice is implemented after adoption. Mohr, for example, includes a definition of innovation that allows for

increased emphasis upon innovative programs recently introduced.¹⁵ Diffusion studies trace the adoption process across subjects but seldom involve a longitudinal study of the separate organizations or individuals that comprise the population of inquiry. The data for determining the diffusion process is usually gathered retrospectively rather than by studying an on-going process over time.¹⁶

Previous studies of innovation in organizations have found the set of factors indicating size, wealth, and the availability of resources to be correlated with innovation.¹⁷ Informality, complexity, and decentralization in organizational structure are other characteristics which have been shown to be indicators of innovation.¹⁸ A survey investigating the determinants of innovation in local health departments in Illinois, Michigan, Ohio, New York, and Ontario was completed by Larry B. Mohr in 1966. A factor strongly related to innovativeness in these organizations was size.¹⁹ It appears that Mohr defined size as the size of the community served rather than as the size of the organization. He found resources to be important for innovation; in fact resources were a prime reason that large departments were able to innovate. Mohr's major hypothesis was that innovation was directly related to the motivation of the health director to innovate, inversely related to the obstacles to innovation, and directly related to the resources of the department.²⁰ Mohr used as an indicator of motivation to innovate, the health department director's answers to a psychological scale tapping his ideology and perception of the role of the public health officer. His measure of the level of resources was the health department's

expenditures for the year just preceeding the time period covered by his analysis. Prior to beginning his study Mohr verified with public health officials the observation that the health director was one of the most important factors determining the innovation of the health department.²¹ His major hypothesis was generally confirmed. Mohr concluded that although size was the strongest predictor of innovation, this was explained by higher levels of resources and fewer obstacles to innovation associated with larger departments.

R. E. Mytinger had earlier studied local public health departments in California. He also found that financial resources were important predictors of innovation.²² He found that the main obstacle to innovation as perceived by the health department directors was the existence of other agencies which competed in the same activity areas. Lack of staff and lack of funds were also considered to be important barriers to innovation.²³

A number of other researchers have all concluded that organizational size and wealth are among the strongest predictors of innovation.²⁴ Manfield's results indicated that the length of time that an industrial firm waits before using a new technique tends to be inversely related to its size.²⁵ Carroll found that innovative medical schools had larger faculties and a larger number of departments than less innovative schools. His interpretation was that innovative schools have more academic subcultures and that this was largely due to greater size and more departments.²⁶

Becker and Stafford found administrative size to be related to innovation among savings and loan associations.²⁷

Informality, complexity, and decentralization in organizational structure are other organizational characteristics which have been shown to be indicators of innovation. James Wilson argues that innovation in an organization is a function of diversity of the types of tasks and incentives available in the organization. He claims that "the greater the diversity . . . the greater the likelihood that some members will conceive major innovations, the greater the likelihood that some members will propose innovations, and the less the likelihood that the organization will adopt the innovations."²⁸ He suggests that this may explain why the evidence is inconclusive on whether large or small organizations are more innovative.²⁹ Sapolsky applied Wilson's hypothesis to the study of department stores and reasoned that an organization which hires professionals who have outside reference groups and unprogrammed tasks would be more innovative.³⁰ He found that the innovative experience of a group of department stores was the result of unplanned structural arrangements.³¹

The professionalization of an organization has been used as a variable in many studies. Some authors have used this as a dimension upon which to categorize organizations. Blau, Heydebrand, and Stouffer for example, found that task differentiation seemed to further the development of a centralized hierarchy of authority unless the organization is professionalized.³² Professionalization when used in reference to organizations can have a meaning at least

as ambiguous as that of innovation, however. The most common use of the term is one that refers to the degree to which the members of the organizations are professionals, i.e., persons who have particular training or are identified with a recognizable profession. Professionalization as an organizational characteristic differs, furthermore, from professionalization as a characteristic of individuals.

The professionalization of an organization has been found in a number of studies to be related to its innovation.³⁴ However Zald and Denton found that one organization was innovative because it did not have a commitment to a particular ideology.³⁵ Browning, on the other hand, concluded in a study of budgeting practices in two state agencies that the professional memberships of the members contributed greatly to the innovative budget practices in the innovative agency.³⁶ He also found that the innovative Welfare Department devoted more resources and time to searching for innovations among its constituent professions than did the non-innovative Labor Department.³⁷ Grodzins refers to the influence of the professional associations of state officials on decision-making.³⁸ Sapolsky found that the professionalization of an organization was linked to its innovation.³⁹ And Evan and Black investigated the effects of the professionalization of management on innovation.⁴⁰

The foregoing discussion has focused on organizational correlates of innovation. To this should be added characteristics of individuals which seem to be related to their being innovators.

The considerable work on innovation done by Everett Rogers contains many findings on individuals and innovation.⁴¹ In exploratory interviews, Mohr found a consensus among public health professionals on the importance of attitudes of the health officer--the chief administrative officer of each department. The health officer was considered to be the most important single factor for the innovativeness of health departments.⁴² The innovativeness of the department was dependent on the willingness of the health officer to advocate change and seek resources.⁴³ Mohr subsequently used a measure of the health officer's ideology and activism as indicators of that officer's motivation to innovate. These as a combined measure were found to correlate with innovation in Mohr's study.⁴⁴ Other individual variables which he found to be related to innovation were age, receipt of Master of Public Health Degree, number of public health positions held per ten years, and length of time in private medical practice. Training and age of key personnel other than the director were found to be related to innovation. These latter two factors, however, could be treated as organizational variables unless one deals with individuals other than the director.

In general the attitudes of an individual toward change were found to be important by Blau, Rogers, Eisenstadt, Becker, and Katz and Coleman.⁴⁵ Blau found both the competence and the material and status interests of an individual to be associated with innovation.⁴⁶ Marshall Becker found that those individuals who were innovative had high prestige among their fellow health officers and tended to be centrally located in relevant public health communication networks.⁴⁷

Rogers also found opinion leadership status to be associated with innovation.⁴⁸ The innovative public health officers in Becker's study were more likely to view their role as that of a professional in the public health field than were those who were not innovators.⁴⁹ Katz and Coleman report similar findings in a study of the adoption of a new drug among private physicians.⁵⁰ Becker found that innovative public health officers were more likely to view professional journals as an important source of information about new programs in public health.⁵¹ Rogers reports that the individual who is willing to seek information about innovations and advice can be expected to be more innovative than the individual who does not.⁵²

The career experience of individuals has been related to innovation and is important here in the studies of public health innovation. Mohr found that the more private practice the health officer had had before coming to public health was negatively correlated with innovation. Mytinger found the younger health officers to be more radical in their willingness to suggest new practices. Both Mohr and Mytinger found health officer tenure and turnover to be related to innovation in the department, although Mohr found turnover in jobs held per ten years to be only weakly related to innovation.⁵³

Since the purpose of this dissertation is to deal with innovation in public bureaucracies, I will discuss briefly studies which have looked at public policy making and policy change as it may relate to innovation. One may wonder at the relevance of applying theories and studies which are essentially organizational

in focus to policy making bodies. The following discussion should shed some light on this. The question may be asked whether the administrative agencies are responsible for or able to innovate or whether they merely follow the mandates of the legislative bodies or the executive. Researchers have found that in some cases the formal decision-making bodies did not account for a very large segment of public policy making and policy change. The impetus for change, more often than not, came from the bureau or agency itself.⁵⁴ Studies to date, however, have often merely been case studies or comparisons of processes in a few agencies to determine the cause of differences in innovation.⁵⁵ The literature in public administration has been deficient in reporting studies of innovation although several studies in public policy making have been implicitly concerned with innovation while a few others focus on this as the primary dependent variable.⁵⁶ At least one author claims that the field of public administration itself is not at all innovative.⁵⁷ Others, however, take an opposing view.⁵⁸ We would expect to find differences from one agency to another or from one administrator to another in the degree to which they innovate. The question at hand here is whether it pays to look within and at the structure of an agency to explain the differences in innovation. The approach taken in this study argues that this is a worthwhile endeavor. The conclusions of a number of studies lends weight to this argument.

Findings and conclusions are not conclusive on the ability of the administrative agencies to be innovative. Sayre and Kaufman, in their study of New York City, wrote that line administrators faced

too many obstacles in terms of vested interests and traditions to be innovative.⁵⁹ Adrian, in a study of policy innovation and leadership in three council manager cities, found that the city manager and members of his administration took principal parts in both areas. He found that the legislative body played a rather limited role.⁶⁰ Browning, in a comparison of two state agencies found that interest groups and the legislature had very little to do with the differences in innovation and budget success between the agencies. The impetus for change and innovation came from within the agency and from professional groups whose members were employees of the innovative agency. Indeed, Browning concluded that the number of professionals in the agency was a significant factor in the agency's budget success.⁶¹

In a study of the diffusion of innovations among American states, Jack Walker found that the process of search and decision by agencies was important. He concluded that the decision rules used by the decision-makers were of great importance. What had been successfully adopted by a given state's neighboring state was quite often used when a problem required a new approach. Walker also found that the larger, wealthier, more industrialized states are more innovative than the smaller, less developed states.⁶²

Ambition

There are two bodies of theory which have motivated this study and which I will draw upon. These are complementary theories having a number of similarities. The first of these is the theory

of the rational bureaucrat as outlined by Anthony Downs in his book Inside Bureaucracy.⁶³ The second is political ambition theory, developed by J. A. Schlesinger and recently tested by a number of researchers in various settings.⁶⁴

Both of these bodies of theory have basic similarities to the compositive method of economics. This method develops hypotheses about social behavior from models of purposive behavior by individuals and has also been described as methodological individualism.⁶⁵ Proponents of this position insist that statements or descriptions about the group or the behavior of groups must be derived from information about individuals.⁶⁶ The individual consumer, entrepreneur, employee, politician, or in Downs' case, bureaucrat is the central figure. He is assumed to face a set of possible actions and to choose the one within the possible set that he most prefers. He is a chooser and is goal directed. This is in contrast to his part in the characteristic method of sociology which has dominated the study of bureaucracy in the past. The sociological approach typically develops hypotheses about social behavior from models of role behavior by aggregate ideal types. The individual is more of a role player in some larger social drama.⁶⁷

In the economist's approach to theory referred to here, the larger environment influences the behavior of the individual by constraining his set of possible actions, by changing the relations between actions and outcomes, and, to some extent, by influencing his personal preferences. The economist develops models of purposive behavior by individuals, not to explain the behavior of individuals

but to generate hypotheses concerning the aggregative consequences of the interaction among individuals and their environments.⁶⁸

Downs' theory and ambition theory do, however, deal with the relationships between environmental characteristics and the ambitions of individuals. In this dissertation, I will be concerned with these relationships.

Downs explains the behavior of bureaus by the actions of the bureaucrats that constitute the bureau. Ambition theory explains the actions of politicians as a response to their office goals. It also focuses on how the structure of opportunities in a political situation shapes a politician's goals. Of the studies dealing explicitly with innovation in organizations, I am aware of none which have treated it formally in the manner to be suggested here.⁶⁹ A number of works, however, have dealt with economic models of organizations.⁷⁰ Niskanen investigates budget and output behavior of bureaus under different conditions and develops a theory of supply by bureaus. His assumptions are consistent with those Downs uses but are less restrictive. As Downs states and Niskanen implies, whenever officials have any discretion, they will use at least some of it to advance their own interests.⁷¹ This follows from the assumptions of rationality and utility maximization and will be used to suggest an explanation for the variation in innovation among organizations.

The general approach being discussed here has been used in analyzing the behavior of private firms as well as that of politicians and bureaucrats. The search for a substitution for the

classical assumption of profit maximization of the firm led to the assumption of the maximization of self-interest by the manager. This self-interest was further assumed to take the form of maximizing the perquisites of his office or furthering his career.⁷² Since bureaus--and almost all other public agencies--are not managed by profit or loss criteria, some substitute for the profit maximization assumption must be made if this economic approach is to be used to study bureaucratic behavior. The assumption that is often made is that the bureaucrat, director, or other actor will attempt to maximize his self-interest by maximizing either directly or indirectly some perquisites of his office or his career goal. Some analysts go beyond just making this assumption to determine the nature of the bureaucrat's goal. That is the approach taken here.

Since much of the theoretical work underlying this study borrows from Anthony Downs and ambition theory each will be described in turn. The fundamental premise of Downs' theory is that bureaucratic officials, like all other agents in society, are significantly, though not solely, motivated by their own self-interests.⁷³ His theory follows the tradition of economic thought from Adam Smith forward and is consistent with recent contributions to political science by Riker, Olson, Buchanan and Tullock, and others.⁷⁴ The theory of Inside Bureaucracy rests on three central assumptions:

1. Bureaucratic officials (and all other social agents) seek to attain their goals rationally. They are utility maximizers.

This means that bureaucrats will take those actions which will best enable them to reach their goals. It also means that they will attempt to get as much of a valued goal as they can.

2. Bureaucratic officials in general have a complex set of goals including power, income, prestige, security, convenience, loyalty, pride in excellent work, and desire to serve the public interest. Regardless of particular goals involved, every official is significantly motivated by his own self-interest even when acting in a purely official capacity.

3. Every organization's social functions strongly influence its internal structure and behavior and vice versa. The environment that Downs' bureaucrats operate within is one in which information is costly, decision-makers have only limited decision-making capabilities, and uncertainty is usually involved in making decisions.⁷⁵

Downs classifies all bureaucrats into five ideal types based on the ranking of goals included in the bureaucrats' set of preferences. He claims that bureaucrats can be expected to use different means to maximize utility depending upon what their goals are. Differences in goals may be due to age, length and type of training, opportunities available, resources available, and organizational structure. Much of the analysis, therefore, is independent of the definition of the ideal types of bureaucrats. The analysis and the propositions that flow from it follow--according to Downs--directly from the three central axioms.⁷⁶

Downs' theory will not be accepted as stated but a set of assumptions which are a modification of Downs and are also consistent

with ambition theory will be suggested. Although the complex set of goals listed in Downs' assumption 2 is probably inclusive, I suggest that bureaucrats tend predominantly to have either one of two sets, the important elements of which are (a) power, income, and prestige, or (b) security and convenience. The individuals corresponding to these sets of goals are what Downs call climbers and conservers, respectively.⁷⁷ This type of categorization is also more similar to the classes of ambition usually suggested by Schlesinger and others in political ambition theory.⁷⁸

Complementing Downs' theory are the findings of ambition theory. This body of literature also focuses on a rational strategy by the actor involved, in this case by politicians running for elective office. This departs from a method of studying politicians through case studies employing psychoanalytic methods or by accumulating social background data of political leaders.⁷⁹ In an early explication of ambition theory, Schlesinger suggests:

The central assumption of ambition theory is that a politician's behavior is a response to his office goals. Or, to put it another way, the politician as office seeker engages in political acts and makes decisions appropriate to gaining office. . . . It makes little difference to the theory of ambition whether they adopt the ambitions suitable to the office or attain the office because of their ambitions. It is sufficient to conclude that governors of New York will behave as though they were Presidential candidates while governors of Mississippi or South Dakota will not.⁸⁰

Schlesinger examined the recruitment patterns among various offices in the United States. One valuable idea in his work is the contention that a man's political motives and desires are molded by the availability of political opportunities and that such opportunities are structurally determined.⁸¹ A number of studies have since

been done testing hypotheses suggested by Schlesinger's work and focusing on one or more aspects of his theory of ambition.⁸² One corollary of his work is the suggestion that the office-holder responds primarily to the immediate forces in his political environment rather than to factors that occurred in the more distant past of the politician. According to Black:

. . . (the politician) probably tends to make decisions on the bases of the costs, benefits, and probabilities that operate at the time of his decision. If this is the case, then one should pay much more attention to the immediate circumstances surrounding a politician at the time of a decision rather than some set of factors in his childhood or elsewhere.⁸³

These works have strengthened, elaborated, and complemented Schlesinger's theory and findings. The study of political ambition is essentially the study of motivation and requires data on individuals; however, as Black has observed, Schlesinger did not "really focus on the actual interaction between the structure of offices and the ambitions of individual politicians."⁸⁴ Several of the more recent studies have dealt with data gathered from or about individual politicians. Black developed a theory of political ambitions which rests on the idea that office-seekers attempt to behave in a rational manner in selecting among alternative offices and tested hypotheses using survey data on San Francisco Bay area politicians. He concluded

. . . that the study of political ambition generally can benefit from an approach that assumes that politicians attempt to behave in a rational manner in seeking their political aspirations . . . finding suggests that a rationalistic explanation of the career choice process may prove to be the road to an adequate theory of political ambition. Our findings also suggest that political ambition develops in part as a result of the investments that politicians make in their political activity.⁸⁵

The theory which underlies the analysis for my study utilizes an assumption basic to both theories discussed above; that is, the assumption that individuals attempt to behave in a rational manner. The set of assumptions necessary for the theory seems to be consistent with both Downs and ambition theory and is as follows:

1. Individuals act in their own self-interest. They have a complex set of goals but are significantly motivated by their own self interest even when acting in a purely official capacity.

2. Bureaucratic officials seek to attain their goals rationally. They are utility maximizers.

3. Information is costly.

4. Individuals as decision-makers have only limited capabilities.

From 3 and 4 it follows that decisions are made in a condition of uncertainty.

The first assumption means that individuals--in this case politicians and bureaucrats--have personal goals toward which they direct their actions. The public servant, in this view, may have an altruistic view of the public interest in mind when doing his job, but this is not his primary goal as the older literature in public administration would have us believe.⁸⁶ The public interest may be an insignificant aspect of the bureaucrat's goal complex. Similarly, in elective politics, it is assumed that men have some private ambition that they seek to fulfill in their efforts to be elected. The tradition that a politician only wishes to seek election to serve the public is not considered very credible.

Based on the assumption that individuals maximize utility, economists assumed that the best way for the manager or owner to do this was to maximize profits. More recent work in the behavior of the firm has expanded the maximand of the manager to include other things, for example such perquisites of office as staff, salary, and fringe benefits.⁸⁷ Public bureaucracies can seldom if ever be evaluated on a profit versus loss basis, so the assumption that bureaucrats attempt to maximize profit will not be useful. However, recent work in political science has adopted the economic mode of analysis and used the assumption that people who work for public agencies attempt to maximize utility and attempt to do so rationally. This must be done through some method other than profit maximization by the agency, however. The typical process in these studies has been to determine, either by assumption, by hypothesis, or by other variables, goals that the politician or bureaucrat will attempt to obtain. Following Downs and others, I determine the goals that bureaucrats can be expected to have and how they may attempt to reach them.

The assumption of rationality--assumption two--implies that the individual, when confronted with a decision, will examine the alternatives with which he is confronted, that he will evaluate those alternatives in terms of the likelihood of their occurrence and the value they hold for him, and that he will choose that alternative which yields for him the greatest expected value.⁸⁸ In this formulation, one assumes that the individual is attempting to select the best alternative for himself, i.e., that alternative which maximizes

his expected value, but he may not, of course, always be correct in his choice.⁸⁹ He may make errors because information is limited and expensive.

Information is obtained at a cost, and the amount readily available to a decision-maker is limited. The decision-maker also is limited in his ability to process and evaluate information. He can only devote a limited amount of time to making any one decision. Assumptions three and four imply that decisions are made in a condition of uncertainty. "Uncertainty in decision theory describes all shades of knowledge of the probability distribution of the states of nature ranging from near accurate estimates based upon objective experience to an extreme case in which no knowledge exists."⁹⁰ Decision-makers do not have perfect information and do not know the exact probabilities of the outcomes of actions. They can only make estimates as to these probabilities based on past experience, the experience of others, and present information. "The decision-maker must generally arrive at his decision through the process of an educated 'guess.'"⁹¹ Moreover, as the cost of information increases, officials will gather less of it for the same payoff.⁹²

The concept of utility maximization is often contrasted with a competing notion of satisficing. In the classical economic literature, utility maximization implied that the decision-maker was able to consider the entire set of alternatives from which he would choose his action. To each alternative was attached a set of consequences--the events that would ensue if that particular

alternative was chosen. The decision-maker could rank all alternatives and their consequences from most preferred to least preferred. He then selected the alternative leading to the most preferred set of consequences.⁹³ The decision-maker is making an optimal choice and thereby maximizing his utility.

Simon and others have pointed out difficulties with this model of rational man.

. . . it makes three exceedingly important demands upon the choice-making mechanism. It assumes (1) that all the alternatives of choice are 'given'; (2) that all the consequences attached to each alternative are known (in one of the three senses corresponding to certainty, risk, and uncertainty, respectively) (3) that the rational man has a complete utility ordering . . . for all possible sets of consequences.⁹⁴

A decision-maker, March and Simon claim, is usually concerned with finding satisfactory alternatives, not optimal ones. "An alternative is satisfactory if: (1) there exists a set of criteria that describes minimally satisfactory alternatives, and (2) the alternative in question meets or exceeds these criteria."⁹⁵ An ordinary decision-maker cannot always search for the best possible solution to the problems he faces; he has neither the time nor the energy. He instead finds an alternative that he thinks is good enough to maintain the values important to him. "The limits of rationality prevent him from maximizing his benefits in every situation; rather he 'satisfices,' or chooses a course of action that seems satisfactory under the circumstances."⁹⁶

Man's behavior in organizations is "intendedly rational."⁹⁷ Simon has two rather important things to say concerning what is "satisfactory." First of all men do not perceive a total situation,

Simon claims, but only that portion of the total which is meaningful and significant to them. In other words, perception is selective.⁹⁸ Secondly, he asserts that what is satisfactory at any given moment is influenced by achievement and defeats of the past as well as things that are presently going on. That is, aspiration levels are conditioned.⁹⁹

Luce and Raiffa describe a modification of utility theory which brings the formal, rational approach more in line with Simon's approach. This modification includes the possibility "that people can neither discriminate perfectly between alternatives with respect to preferences nor between events with respect to likelihood."¹⁰⁰

The bureaucrats in Downs' theory are utility maximizers as are the actors in most rational choice approaches in political science.¹⁰¹ However, Downs' theory contains elements of both the maximizing and the satisficing approaches. The theory underlying this dissertation treats individuals as maximizers; they are rational in Simon's sense of being intendedly rational.¹⁰² That is, they attempt to choose the best alternative under the limits of time pressure, lack of information, and lack of energy. An alternative which is good enough in some situations may not be good enough in others.

In the context of organizational innovation, the foregoing assumptions lead us to analyze behavior which is best illustrated by the following passage from Downs:

. . . analysis of organizational change . . . focuses . . . on individuals. Because they are utility maximizers, they are always willing to adopt a new course of action if it promises

to make them better off, even if they are relatively happy at present. However, they cannot search for new courses of action without expending resources. Since the supply of these is limited, they tend to avoid further search whenever the likely rewards seems small a priori (that is, the expected marginal payoff seems smaller than the expected marginal cost). This is the case whenever their current behavior seems quite satisfactory in light of their recent experience.¹⁰³

The theory of Inside Bureaucracy and ambition theory suggest that the motivation of the individual, that is, the goals he has set for himself determine, in part at least, the actions that he takes. Individuals choose and evaluate their goals by taking into consideration their present position, age, competence, past success and failures. They probably also compare themselves to others like them in evaluating their chances for obtaining a particular goal. Within this framework then, they take actions which they believe will bring them closer to their goals, i.e., bring them the greatest amount of utility. The actor in this situation must take into consideration the resources and opportunities at hand. In cases where resources are necessary to develop policy which will bring the individual prestige, the individual desiring prestige will be frustrated if these resources are not available.

In both ambition and bureaucratic ambition theory, the actor's behavior is a response to his career goal as defined within the context of the research interest. That is, the elected official has a set of possible offices the attainment of which is evaluated against other alternatives. For the bureaucrat, the career goals are from a set of positions or circumstances within the structure of his relevant profession or bureaucracy.

Downs' Inside Bureaucracy has not been accepted without criticism. Those reviews which have appeared have been mixed but some have had stiff criticism for certain aspects of Downs' work. Probably the most common criticism of the book is that in it Downs does not really present a theory. Murray gives a mixed review of the work stating this criticism. It fails to be a theory, Murray claims, because Downs is unable to work with a fixed set of variables and talk only about the inter-relationships between them. But Murray goes on to say:

. . . once one realizes that Inside Bureaucracy is not a real theory and not a valid basis for explaining the difference between state-run and private organizations, one can go on to appreciate Downs' original and perceptive analysis of any number of large and small phenomena which arise in the internal operation of any large organization.¹⁰⁴

Crecine also criticizes and praises the book, faulting Downs for introducing "a hopeless number of variables" and failing "to utilize his 'axioms' in any meaningful way."¹⁰⁵ According to some criticism Downs' "Laws" are not derived from the axioms but merely appear. The propositions also are not formally derived from the assumptions and would be very difficult to test for the most part according to these critiques.¹⁰⁶

Downs' is not a fully formalized theory but does present an interesting and potentially useful framework which utilizes many of the ideas of ambition theory. I will suggest hypotheses to be tested from the combination of ambition theory and Inside Bureaucracy. These hypotheses will not be derived in a formal sense but their relationship to the theory presented will be shown. Furthermore,

a number of Downs' propositions are tested. Downs' theory appears to be what Rudner refers to as a partial formalization or a less than complete elaboration of a theory as a deductive system.¹⁰⁷

The occurrence of non-indigenous terms in a partially formalized theory indicates that some portion of the results of other disciplines or areas of knowledge are being presupposed in the theory.¹⁰⁸ This also seems to be the case in Downs' theory and it will be carried further by the combining of aspects of Inside Bureaucracy with ambition theory and organization theory.

Downs' theory is also quasi-deductive, that is, it purports to be deductively elaborating . . . but . . . fails to meet the requirements for being a deduction. Such failure usually stems from neglecting, deliberately eschewing, or being unable to make explicit all of the statements requisite as premises, as well as neglecting or being unable to make explicit all of the rules and steps required in arriving at the conclusion.¹⁰⁹

The critiques of Inside Bureaucracy mentioned earlier indicate that it is characterized by quasi-deduction. Rudner, however, seems to find this kind of a theory less undesirable than does Crecine in his review.¹¹⁰

The theory that I have outlined from Inside Bureaucracy and ambition theory will be both quasi-deductive and only partially formalized.¹¹¹ The hypotheses that I present will for the most part be generated from the theory but the deductions will be incomplete. Arguments and findings of other disciplines, mainly organization theory and ambition theory, will be brought in to show why the relationships in the hypotheses are to be expected in terms of the theory and previous research. The assumptions necessary to show

the deduction of the hypotheses may not all be made explicit and the steps in the deduction will not always be complete. However, the assumptions outlined earlier and the discussion will be sufficient, in most cases to establish the hypotheses. In other cases, hypotheses directly from Inside Bureaucracy will be tested.

The task of the study is extensive. The primary dependent variable is organizational innovation. The first set of hypotheses examines the relationship of innovation to organizational characteristics of the public health departments. Hypotheses considering the characteristics of the bureaucrats, in this case the local Public Health directors, and their relationships to the expressed ambitions of these officials will be tested. Another set of hypothesis will relate individual characteristics of directors to departmental variables. A final set of hypotheses will suggest an explanation for organizational innovation in terms of the expressed ambitions of bureaucrats and the characteristics of the departments.

Schematically, the study will deal with the variable set in Figure 1. The next chapter will discuss hypotheses that link these elements to each other.

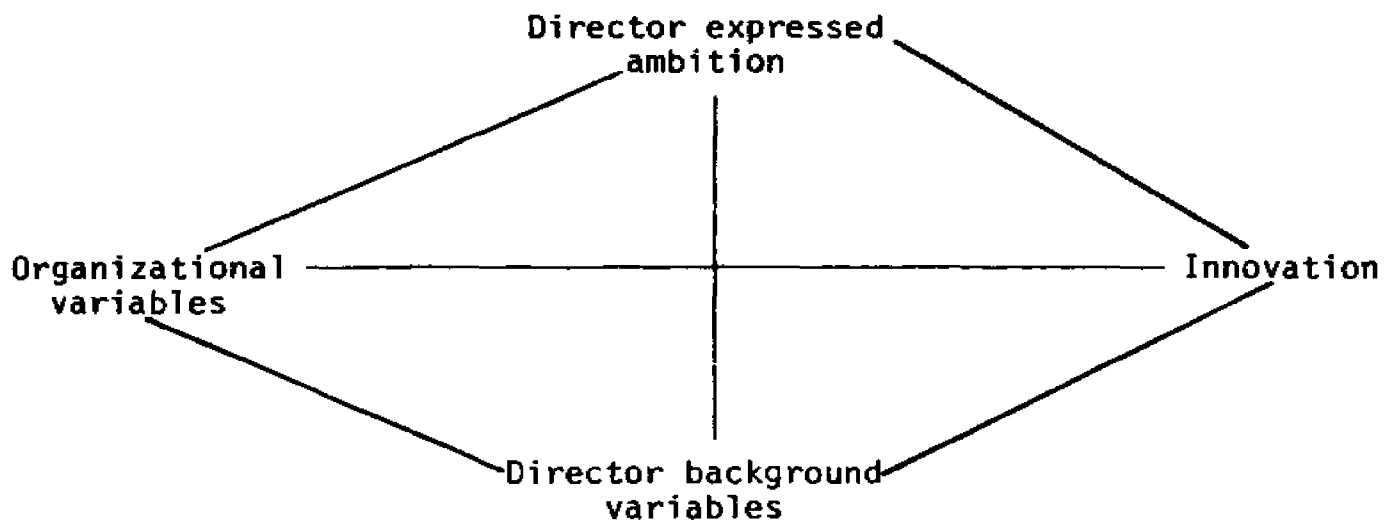


Figure 1-1.--Elements of a Model of Organizational Innovation.

Chapter I--Footnotes

¹Robert E. Mytinger, "Innovations in Public Health" (unpublished doctoral dissertation, University of California at Los Angeles, 1965); Lawrence B. Mohr, "Determinants of Innovation in Organizations" (unpublished doctoral dissertation, University of Michigan, Ann Arbor, 1966); L. B. Mohr, "Determinants of Innovation in Organizations," American Political Science Review, 63 (1969), pp. 111-126.

²See Mohr, American Political Science Review, op. cit., p. 112; Victor A. Thompson, Bureaucracy and Innovation (University of Alabama, University of Alabama Press, 1969); pp. 5, 6 and 68; Everett M. Rogers, Diffusion of Innovations (New York: Free Press of Glencoe, 1962), p. 308; James Q. Wilson, "Innovations in Organizations: Notes Toward a Theory," Approaches to Organizational Design, ed. James D. Thompson (Pittsburgh: University of Pittsburgh Press, 1966), p. 196; Homer G. Barnett, Innovation (New York: McGraw-Hill Book Company, 1953), p. 7; John W. Loy, Jr., "Social-Psychological Characteristics of Innovators," American Sociological Review, 34 (1969), p. 75.

³Thompson, op. cit.

⁴Ibid.

⁵Mohr, American Political Science Review, op. cit., p. 112; Rogers, op. cit., pp. 195-196; Herbert A. Simon, "The Changing Theory and Changing Practice of Public Administration," in Contemporary Political Science: Toward Empirical Theory, ed. Ithiel De Sola Pool (New York: McGraw-Hill Book Company, 1967), p. 107.

⁶Mohr, op. cit., p. 113; Thompson, op. cit., pp. 5-6.

⁷Rogers, op. cit., p. 2; Loy also relies on Rogers' definition. See Loy, op. cit.

⁸Mohr, op. cit., p. 112.

⁹Larry Kirkhart and Orion White, "The Future of Organizational Development," Public Administration Review (March/April, 1974), pp. 129-140.

¹⁰Jerald Hage and Michael Aiken, "Program Change and Organizational Properties: A Comparative Analysis," American Journal of Sociology, 72 (March, 1967), pp. 503-519.

¹¹Talcott Parsons, The Social System (Glencoe, Illinois: The Free Press, 1951), Chapter 12.

¹²Hage and Aiken, op. cit.; Peter Blau, "Structural Effects," American Sociological Review, 25 (1960), pp. 178-193.

¹³Hage and Aiken, op. cit., p. 518.

¹⁴Mohr, op. cit., p. 113.

¹⁵James S. Coleman, E. Katz, and Herbert Menzel, Medical Innovation: A Diffusion Study (Indianapolis, Bobbs-Merrill Company, 1966).

¹⁶Mohr, op. cit., pp. 112-117, 119-126; Edwin Mansfield, "The Speed of Response of Firms to New Techniques," Quarterly Journal of Economics (May, 1963), pp. 239-304; Mytinger, op. cit., p. 212; Hage and Aiken, op. cit., pp. 516-517; Samuel N. Eisenstadt, The Political System of Empires (New York: The Free Press of Glencoe, 1963), pp. 27, 33-112; Rogers, op. cit., pp. 40, 285-292.

¹⁷Hage and Aiken, op. cit., pp. 503-519.

¹⁸Mohr, op. cit., pp. 111-126.

¹⁹Ibid., pp. 114.

²⁰Ibid., pp. 114-115.

²¹Mytinger, op. cit., p. 212.

²²Robert E. Mytinger, "Barriers to Adoption of New Programs as Perceived by Local Health Officers," Public Health Reports, 82 (February, 1967), pp. 108-114.

²³Mansfield, op. cit.; Eisenstadt, op. cit.; Rogers, op. cit.

²⁴Mansfield, op. cit., p. 309.

²⁵Jean Carroll, "A Note on Departmental Autonomy and Innovation in Medical Schools," Journal of Business (October, 1967), pp. 533-534.

²⁶Selwyn Becker and Frank Stafford, "Some Determinants of Organizational Success," Journal of Business (October, 1967), p. 511.

²⁷Wilson, op. cit., p. 198.

²⁸Ibid., p. 200.

²⁹Ibid., p. 205.

³⁰Harvey Sapolsky, "Organizational Structure and Innovation," Journal of Business (October, 1967), p. 498.

³¹Ibid., p. 509.

³²Peter Blau, S. Heydebrand, and R. Stouffer, "The Structure of Small Bureaucracies," American Sociological Review, 31 (April, 1966), p. 186.

³³Ibid., p. 187; Victor A. Thompson, op. cit.

³⁴Mayer Zald and Patricia Denton, "From Evangelism to General Service: The Transformation of the YMCA," Administrative Science Quarterly, 8 (September, 1963), pp. 235-246.

³⁵Rufus P. Browning, "Innovative and Non-Innovative Decision Processes in Governmental Budgeting," in Public Budgeting and Finance: Readings in Theory and Practice, ed. R. T. Golembiewski (Itasca, Illinois: F. & E. Peacock Publishers, 1968), pp. 128-145.

³⁶Ibid.

³⁷R. S. Friedman, L. B. Mohr, and R. M. Northrup, "Innovation in State and Local Bureaucracies, Paper delivered at the American Political Science Association Annual Meeting, New York City, September 6-10, 1966.

³⁸Sapolsky, op. cit.

³⁹R. Evan and S. Black, "Innovation in Business Organizations," Journal of Business (October, 1967), pp. 519-531.

⁴⁰Rogers, op. cit.

⁴¹Mohr, dissertation, p. 71.

⁴²Ibid., p. 47.

⁴³Mohr, American Political Science Review, pp. 115-118.

⁴⁴Peter Blau, The Dynamics of Bureaucracy (Second Edition, revised; Chicago: University of Chicago Press, 1962); Rogers, op. cit.; Eisenstadt, op. cit.; Marshall Becker, "Factors Affecting Diffusion of Innovations Among Health Professionals," American Journal of Public Health, 60 (February, 1970), pp. 294-304; Coleman, Katz, and Menzel, op. cit.

⁴⁵Mytinger, Innovation in Public Health, p. 195; Rogers, op. cit., pp. 285-292. See L. B. Mohr, American Political Science Review, p. 113.

⁴⁶Blau, The Dynamics of Bureaucracy, p. 246.

⁴⁷Becker, op. cit.

⁴⁸Rogers, Diffusion of Innovation, op. cit.

⁴⁹Becker, op. cit.

⁵⁰Coleman, Katz, and Menzel, op. cit.

⁵¹Becker, op. cit.

⁵²E. M. Rogers and A. E. Havens, "Predicting Innovativeness," Sociological Inquiry (1962), p. 38.

⁵³Mohr, dissertation, pp. 100, 161, and 163; Mytinger, op. cit.

⁵⁴Friedman, Northrup, and Mohr, op. cit.; Aaron Wildavsky, The Politics of the Budgetary Process (Boston: Little, Brown, and Company, 1964).

⁵⁵For example, Browning, op. cit.

⁵⁶Friedman, Northrup and Mohr, op. cit.

⁵⁷Thompson, Bureaucracy and Innovation, p. 60.

⁵⁸Simon in Ithiel de Sola Pool, op. cit.

⁵⁹Wallace Sayre and Herbert Kaufman, Governing New York City (New York: Russell Sage Foundation, 1960).

⁶⁰Charles Adrian, Four Cities: A Study in Comparative Policy Making (Philadelphia: University of Pennsylvania Press, 1963).

⁶¹Browning, in Golembiewski, op. cit.

⁶²Jack Walker, "Innovations in State Politics," in Politics in the American States: A Comparative Analysis, ed. Herbert Jacob and Kenneth Vines (Second edition; Boston: Little, Brown, and Company, 1971), pp. 354-387, especially pp. 363-368, and 359.

⁶³Little, Brown, and Company; Boston, 1967.

⁶⁴Joseph A. Schlesinger, Ambition and Politics (Chicago: Rand McNally and Company, 1966). Others who have done empirical research on ambition theory include Gordon S. Black, "A Theory of Political Ambition: Career Choices and the Role of Structural Incentives," American Political Science Review, 66 (March, 1972), pp. 144-159; Kenneth Prewitt and William Nowlin, "Political Ambitions and the Behavior of Incumbent Politicians," The Western Political

Quarterly (June, 1969), pp. 298-308; Kenneth Prewitt, The Recruitment of Political Leaders: A Study of Citizen Politicians (New York: Bobbs-Merrill Company, 1970); Paul L. Hain, "American State Legislators' Ambition and Careers: The Effects of Age and District Characteristics" (Unpublished Ph.D. dissertation, Michigan State University, 1971); E. N. Swinerton, "Ambition and American State Executives," Midwest Journal of Political Science, 12 (November, 1968), pp. 538-549; R. L. Engstrom, "Political Ambitions and the Prosecutorial Office," Journal of Politics, 33 (February, 1971), pp. 190-194.

⁶⁵William A. Niskanen, Jr., Bureaucracy and Representative Government (Chicago: Aldine-Atherton, 1971), pp. 5-6.

⁶⁶May Brodbeck, "Methodological Individualism: Definition and Reduction," in Readings in the Philosophy of the Social Sciences, ed. Brodbeck (New York: Macmillan, 1968), pp. 280-303.

⁶⁷Niskanen, op. cit.

⁶⁸Ibid.

⁶⁹Richard Cyert and James March, A Behavioral Theory of the Firm (Englewood Cliffs, New Jersey, 1963), treat innovation briefly and in a very limited way.

⁷⁰In addition to Cyert and March, op. cit., see Oliver Williamson, The Economics of Discretionary Behavior: Managerial Objectives in a Theory of the Firm (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1964); and R. J. Monson, Jr., and Anthony Downs, "A Theory of Large Managerial Firms," American Economic Review, 73 (June, 1965), pp. 221-236.

⁷¹Downs, Inside Bureaucracy, pp. 75-112; Niskanen, op. cit., pp. 40-41.

⁷²Oliver E. Williamson, "A Model of Rational Managerial Behavior," in A Behavioral Theory of the Firm, ed. R. M. Cyert and J. G. March, pp. 237-252.

⁷³Downs, op. cit., p. 2.

⁷⁴William H. Riker, The Theory of Political Coalitions (New Haven: Yale University Press, 1962); Mancur Olson, Jr., The Logic of Collective Action (Cambridge, Massachusetts: Harvard University Press, 1965); Gordon Tullock, The Politics of Bureaucracy (Washington, D.C.: Public Affairs Press, 1965); James Buchanan and Gordon Tullock, The Calculus of Consent (Ann Arbor: University of Michigan Press, 1962).

⁷⁵Downs, op. cit., p. 2-3.

⁷⁶Ibid., p. 91. Downs refers to these assumptions as hypotheses. However, they are never tested directly nor is the suggestion made that they be tested. Their truth is only assumed and propositions for testing are generated from them. They therefore are more properly called assumptions. See Julian Simon, Basic Research Methods in Social Science (New York: Random House, 1969), pp. 35-38.

⁷⁷Downs, op. cit., p. 88.

⁷⁸Schlesinger suggests three major types of ambition: static, discrete, and progressive (Schlesinger, op. cit., pp. 10-11). Those with static ambitions desire to maintain their present elective office, those with progressive ambitions would desire a higher office. Black expresses a similar notion by outlining two levels of political commitment, positional commitment, which is the politician's commitment to his current position; and progressive commitment, the politician's commitment to seek other political and governmental positions (Gordon Black, op. cit., p. 150). Both bear similarities to Downs' climber/conserver categorization of bureaucratic types of ambition.

In a preliminary attempt to validate the appropriateness of Downs' classification to the study of Public Health officials in Michigan, I discussed aspects of the theory and my proposed study with a number of professionals in the field of Public Health in Michigan. One suggested that this classification generally described the types of individuals found as health officers in local jurisdictions within the state.

⁷⁹Gordon Black, op. cit.

⁸⁰Schlesinger, op. cit., pp. 6-9.

⁸¹Black, op. cit., p. 144. Black gives support to this notion although he does not verify it empirically. ". . . I suspect that the ambitions of individuals are strongly shaped by the availability of opportunities and that this effect is strongly manifested in the probability estimates that politicians assign to various alternatives."

⁸²Prewitt, op. cit., pp. 186-188; Prewitt and Nowlin, op. cit.

⁸³Black, American Political Science Review, 1972, p. 145.

⁸⁴Ibid., p. 144.

⁸⁵Ibid., pp. 145, 158-159.

⁸⁶Niskanen, op. cit., p. 36-37.

⁸⁷Williamson in Cyert and March, op. cit.

⁸⁸Black, American Political Science Review, 1972, pp. 145-146. See R. D. Luce and Howard Raiffa, Games and Decisions (New York: John Wiley and Sons, 1957), and Anthony Downs, An Economic Theory of Democracy (New York: Harper and Brothers, 1957), pp. 4-11.

⁸⁹Black, op. cit., p. 146.

⁹⁰Stephen H. Archer, "The Structure of Management Decision Theory," in Public Administration: Readings in Institutions, Processes, and Behavior, ed. R. T. Golembiewski, F. Gibson, and G. Cornog (Chicago: Rand McNally and Co., 1966), pp. 3-18.

⁹¹Black, op. cit.

⁹²Downs, Inside Bureaucracy, pp. 176-178.

⁹³James March and Herbert Simon, Organizations (New York: John Wiley and Sons, 1958).

⁹⁴*Ibid.*, p. 138.

⁹⁵*Ibid.*, p. 140.

⁹⁶Walker in Jacob and Vines, op. cit., p. 365.

⁹⁷Ruth P. Mack, Planning on Uncertainty: Decision Making in Business and Government (New York: John Wiley and Sons, Inc., 1971), p. 61.

⁹⁸*Ibid.*, p. 62.

⁹⁹Herbert Simon, "A Behavioral Model of Rational Choice," Models of Man (New York: John Wiley and Sons, Inc., 1957), p. 253.

¹⁰⁰Luce and Raiffa, op. cit., p. 373.

¹⁰¹Downs, Inside Bureaucracy, p. 168. His theory contains aspects of both the "maximizing" and "satisficing" approaches to rationality and decision making.

¹⁰²Herbert Simon, Administrative Behavior (Second edition; New York: MacMillan Company, 1961).

¹⁰³Downs, op. cit., p. 168.

¹⁰⁴J. Murray, "Review of Anthony Downs," Inside Bureaucracy, Public Administration Review (January/February, 1968), p. 92.

¹⁰⁵John P. Crecine, "Review of Anthony Downs," Inside Bureaucracy, American Science Review, 63 (1969), pp. 182-183.

¹⁰⁶Ibid.

¹⁰⁷Richard S. Rudner, The Philosophy of Social Science
(Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1966), p. 47.

¹⁰⁸Ibid., p. 48.

¹⁰⁹Ibid., p. 50.

¹¹⁰Ibid., pp. 50-53.

¹¹¹Ibid., p. 50.

CHAPTER II

HYPOTHESES, RESEARCH SETTING AND RESEARCH DESIGN

In this chapter I set forth the hypotheses and present arguments for the relationships which are predicted by them. The discussion will attempt to show how the hypotheses are consistent with the theory presented in the previous chapter. However, much of the argument will rely on related theories and other research findings which support the relationships in each hypothesis.¹

Although there are three major sets of hypotheses, I will begin by focusing on those hypotheses which include innovation as their dependent variable. I will then extend the discussion to include hypotheses with other dependent variables and attempt to explain the relationships by grounding the hypotheses in the theory outlined in Chapter I.

Although Downs argues that different types of bureaucrats are more likely to be found in some bureaus or organizations than others, I will delay the discussion of hypotheses dealing with these variables until a later section. These hypotheses will be important when I argue that individuals with certain characteristics are more likely than others to be found as directors of departments with certain kinds of output or policy, e.g., innovation. We have to go beyond Schlesinger's ambition theory to predict that some of the

variation in organizational innovation is due to the goals of the directors of the organizations or departments. Ambition theory suggests that politicians will have different goals and that these will be important for behavior. But this will have to be developed further to explain why some bureaucrats will be more innovative than others. In a later section I will discuss why it is reasonable to expect climbers, more than conservers, to be innovative.

Correlates of Innovation in Public Health Departments

There are a number of factors beside the director which will influence health departments, and many other organizations, to be more or less innovative. Although the aggressiveness of the director will influence the innovation of the department there are a number of organizational characteristics which are likely to have an effect on innovation separate from that of the director. So, although the director is important, we can predict that, for example, departments with more financial resources will be more innovative despite the type of bureaucrat who is the director. The complexities of the joint influence of organizational factors and director types on innovation will be dealt with in various succeeding sections.

Without data on individuals in organizations, researchers must first deal with organizational variables and be careful about any statements attributing policy output to the individuals in the organizations. I can, however, based on the theory outlined earlier, show how the organizational factors to be discussed influence innovation by making it more or less difficult or likely that the department

will innovate. Mohr, Mytinger, and others have obtained data on individuals and departmental resources and Mohr has investigated additive and multiplicative models which included the personal characteristics of the health department director as well as organizational and community characteristics.² However, he did not rely on a unifying theory to generate hypotheses or explain relationships. My procedure will be to investigate first some organizational correlates of innovation. I will then incorporate into the analysis the goals and backgrounds of the directors of the health departments to help explain the relationships which are found.

The first hypothesis of this set is:

Hypothesis A-1: The level of resources will be positively correlated with innovation in local public health departments.

The level of resources has been one of the factors that has consistently been found to correlate positively and usually strongly with innovation. Mansfield found this to be the case in industrial organizations as did Mohr and Mytinger in public health departments.³ I will test this hypothesis using alternative indicators of the level of resources. However, this variable will be primarily operationalized by using the size of the departmental budget. The measures of the variables will be discussed in a later section when I present the testing of the hypotheses.

Larger amounts of resources implies more money available for higher salaries which would attract more highly qualified personnel and more likely more technical help such as secretaries

and clerical aid. Larger resources may also lead to more subscriptions to professional journals and the capability to travel to professional meetings. A larger amount of resources suggests that there will be more slack resources, that is uncommitted funds, for assignment or use by the discretion of the director and staff.⁴

Mohr made the assumption, which I feel is valid, that greater resources would mean greater discretion in the commitment of resources for organizations in general.⁵ Resources would seem to be a necessary, if not sufficient, prerequisite for other departmental mechanisms such as specialists and research by which departments may innovate. The salary range of the departments also seemed to be a close function of the size of the budgets of the departments.

Closely related to the resources of the department as measured by budget are the size of the department in terms of the number of employees and the size of the population served by the department. The size of the organization itself suggests that there are more people available to develop new programs and to bring them to the attention of the director. In addition, larger departments are likely to have more specialties among their employees than smaller departments, increasing the number of different types of programs suggested. Larger departments are also more likely to be able to assign personnel to fewer tasks than spending a limited amount of time on a variety of things. The former aspect would allow the employees to become more specialized and knowledgeable about problems and possible solutions. A second hypothesis, then, is:

Hypothesis A-2: The number of employees in a department will be positively correlated with the innovation of the department.

Past research has supported this hypothesis also.⁶ In the larger departments the director is likely to be aided by a deputy director and possibly an assistant director or an administrative aide. This relieves the director of many of the routine administrative chores so he can devote more time to policy and program development. Or he can delegate some of these latter tasks to his assistants. In addition, the larger departments are able to have more persons working in problem areas in which they have expertise. These persons are made aware of problems as well as possible solutions and are able to suggest and work on programs relevant to solving these problems.⁷ The arguments supporting the hypothesis of a relationships between size and innovation also suggest the additional hypotheses:

Hypothesis A-3: The professionalization and diversity of a department will both be positively correlated with its innovation.

I suggested in Chapter I that a number of studies had found the professionalization of the organization to be related to innovation. Other studies have worked with specialization and diversity, two concepts which often appear to be very similar to the usage of the concept professionalization. One way of accounting for the relationship between professionalization and innovation is to look at the role that specialization plays in organizations. Smith presents an argument for a system's capacity for innovative activity.⁸ The argument:

rests on this basis: more complex, highly differentiated systems, incorporating within them a greater number of roles through a system of specialization and the division of labor also incorporate a greater level of knowledge and information processing ability.⁹

Smith uses the argument to imply that diversity of roles leads to more information processing ability in a system which then aids innovation. "The relationship between system differentiation, conceived of as information-processing ability or level of knowledge and expertise, is reflected throughout much of the sociological literature on both communities and formal organizations."¹⁰ Note that Wilson also makes the argument that diversity in an organization leads to more innovations being suggested.

I will test the hypothesis that specialization is related to innovation. However, it seems that it is not simply the number of roles in a system which increases information processing ability, but the presence of certain types of roles. That is, it is specialization of professionalization, rather than diversity itself which accounts for innovation which is due to information processing ability. Smith turns to a similar argument.

A supplementary explanation of the differentiation-innovation linkage, going beyond the argument that specialized roles incorporate a greater level of specialized knowledge, takes into account the sources of this knowledge. Hage (1965) has argued that the specialists of any organization have channels of information both within and outside the organization which make them more aware of the need for innovation in response to external and internal strains. The greater the number of such occupational specialties within the organization, the more closely is that organization linked with others and the greater the flow of information into the . . . system.¹¹

Jack Walker uses a similar line of reasoning in connection with state bureaucracies and the contacts that professionals maintain

outside these organizations.¹² Crain, et al., evidence supports this reasoning. They found that communities with the more professional city manager, having greater contacts, are more likely to adopt a wide variety of progressive community programs.¹³ Browning also concluded that the contacts that members of a state agency had with professional associations outside the agency were a major factor in innovation.¹⁴

In addition to testing the hypothesis that role diversity in a public health department is related to innovation. I will attempt to test the relationship between professional roles or professional specialties within the organization and innovation. This is what I will mean by professionalization and it will be measured in two ways. First, if it is the professional contacts that the department has with outside professional organizations that aid in innovation, the greater the number of professions to which the department has ties, the greater would be the types of information available and the greater the innovation. So one measure of professionalization will be the number of separate professional occupations represented by the employees of the department.

But also important is the number of individuals maintaining such contacts. The more individuals with outside professional affiliations, the more information-processing ability and the more awareness of programs will be in the department. There will also be support from more individuals for innovative programs. It is not only the number of professions to which the department has channels

but the number of persons maintaining these channels which are important for innovation. Persons of different professions are likely to be concerned with a number of different problems and suggest programs to help solve these perceived problems. The larger number of professions and professionals in a department may help to increase the innovativeness of the department due to these persons keeping up with developments in their professions, attending meetings, gaining new information on techniques, and being less resistant to new ideas presented in the department.¹⁵ These employees would also tend to be more cosmopolitan in their outlooks and opportunities for employment in other organizations would exist leading them to strive for innovations for which they can take responsibility. Here we see the employee striving to keep up his professional reputation and probably responding to the norms of a reference group essentially outside of his department. This type of employee would also be less threatened by changes he opposed within the department if employment opportunities were available elsewhere.

The number of specialties itself will be used as a variable, however. Smith argues that more roles provides more information processing ability to the system which leads to more innovation.¹⁶ Hage and Aiken measure specialization by the number of different types of work which are done in the organization.¹⁷ I will use a similar measure. Durkheim presents an argument that competition among specialties leads to more innovation through the attempt to obtain more resources.¹⁸ So the greater the number of separate specialties, the greater the efforts to expand and the more innovation

will be attempted. I will measure diversity by the number of occupational specialties within the department and test the following corollary of hypothesis A-3:

Hypothesis A-4: The number of occupational specialties will be positively correlated with innovation in public health departments.

The assumptions of rationality and self-interest apply to all department employees, as well as to all social actors, not just to the director, although I will only have individual data on the directors. But we can expect each employee to act in his or her self-interest. Each specialist, for instance, will attempt to build up his section of the department and to obtain more resources for what he is doing. The more the specialist has affiliations with extra-organizational professions the more he is likely to be aware of new techniques as well as want to implement them. He will also want to build a good employment reputation for himself and will of course have his professional organization as a reference group.

The next hypothesis in this set concerns the size of the population served by the health department.

Hypothesis A-5: The size of the population of the community served by the department will be positively correlated with the innovation of the department.

Population may be highly correlated with department size and resources, so it could be difficult to separate the correlation of these three variables with innovation. Larger population are accompanied by larger absolute amounts of resources for the department. So inasmuch as larger populations are a cause of larger resources, we would expect population to be related to innovation.

However, there are reasons to believe that the size of the population may have an effect by itself on innovation. Larger populations usually imply a greater number and type of problems to be dealt with, thus evoking a greater search for solutions.¹⁹ There may be a greater demand for health services. The health department personnel can use the fact of greater population as a supportive argument for new programs. Larger populations also suggest that an urban area is involved, where the population may have organized interest groups along some lines, such as welfare mothers, for example. There is probably an interaction here between population and size of department. That is, if a department has a large population but a small staff, it may be less innovative than a department with a smaller population to serve that is able to assign adequate staff to dealing with local health problems. I suspect that the correlation between department size and population size is quite strong, however.

Mohr found community size to be related to innovation and made an effort in his analysis to trace the effects of community size on resources and innovation.²⁰ Mytinger found the more innovative health departments in California to be serving large population groups.²¹ Both of these researchers found several of the factors descriptive of large size to be correlated with innovation. Although I have argued that each of these factors--resources, size, and population--has a separate contribution to innovation, they have been found to be so highly correlated with each other that some difficulty may arise in assessing their separate effects.

An additional set of factors to be considered here are the changes in resources, size, and population. One might expect an increase in resources or personnel to be followed by the adoption of new programs, i.e., innovation. An increase in the budget is likely to be associated with innovation for a number of reasons. Innovation may be used by a director as a strategy to increase the department's total resources. Although budgets tend to rise each year anyway, a new program would probably require more additional resources than continuing ongoing programs. An increase in resources or size may indicate the adding of new staff in program areas which are innovative. Increased resources may also be indicative of uncommitted resources which may then be used to innovate.²² A change in the size of a department may also be expected to be associated with innovation. An organization that is growing may be hiring new personnel that can innovate in the program areas discussed as innovative. My theory also predicts that climbers--those with aspirations of power, money, and prestige--are drawn to growing organizations and are more likely to press for innovation than are conservers who are not likely to be found in growing organizations.²³ The following hypotheses are suggested:

Hypothesis A-6: There will be a positive correlation between the change in resources and the innovation of public health departments.

Hypothesis A-7: There will be a positive correlation between the change in the size of a department and the innovation of the department.

A change in population of the jurisdiction served may also be expected to correlate with innovation. An increase in population

may present the department with new health problems that need to be dealt with. However, if an increase in population is not accompanied by an increase in funds and personnel from the county commissioners or other sources, then the department will fall behind in its provision of services. A slow but steady increase in population will likely be accompanied by increases in resources and lead to innovation for the reasons discussed. However, a large or sudden increase in population is likely to result in a lag in services and may be negatively correlated with innovation. The hypothesis suggested is:

Hypothesis A-8: The change in population served by the health department will be correlated with innovation.

The testing of this first set of hypotheses will explore organizational characteristics which are necessary for or conducive to innovation. Later sections will show that the characteristics of the directors of the health departments involved are related to organizational innovation. The hypotheses in this set imply that certain organizational properties are responsible for a major share of the variance in innovation. The implication at this point is that these characteristics are conducive to innovation independently of the type of bureaucrat who is the director of the department. Mohr has analyzed a multiplicative model which takes into consideration the motivation of the health officer. Later sections, as indicated previously, will bring into the analysis the characteristics of the directors of the public health departments. Interaction may be expected between the department and director variables. For example, given the same amount of resources, the innovation of the department will depend greatly on the actions of the leadership.

However, the leadership of the director will have greater or less effect on innovation depending upon the level of resources and other organizational factors. First, the organizational and director correlates of innovation will be analyzed separately and then the joint influences will be considered. Interaction effects of these two sets of independent variables will also be included.

Correlates of Director Ambition

A second set of hypotheses deals with characteristics of the directors of the health departments. Before placing these directors in the analysis with organizational structure and innovation, I discuss the hypotheses which allow me to form the link between individuals' background characteristics and their expressed goals. Then additional hypotheses which relate goals to behavior and to organizational variables will be discussed.

The public health studies in innovation found a number of individual characteristics as well as organizational characteristics to be related to the innovation of the health departments. The theory outlined in Chapter I suggests that individuals will be found in organizations that best enable them to obtain their private and public goals. Based on the axioms of the theory, I can classify the health department directors into categories of expressed ambition and expect that those with different ambitions will behave differently in performing their jobs. Of course the organizational environment is important in determining these officials actions also.

Different life experiences will give rise to different ambitions among bureaucrats. These life experiences include training, past career and also age. But the opportunities that a public health director or any other kind of bureaucrat confronts, and his experience with them will influence his ambitions. In Chapter IV I will test hypotheses which link characteristics of the department directors to departmental innovation and attempt to make some assessment of the process by which this occurs. But prior to this I will discuss and test hypotheses which link the characteristics of these individuals to their ambitions.

Downs bases much of his analysis on the classification of bureaucrats according to their goals. This is similar to the ambition approach taken by Schlesinger and others. The following hypotheses deal with characteristics of directors which can be used to help classify them according to ambition. The hypotheses in this section concern variables which are expected to be related to the goals, and thus the ambitions, of bureaucrats.

The discussion up to now has drawn on the theory developed in the previous chapter. However, much of the discussion has relied on related theories and other research findings which support the expected relationships in each hypothesis. The discussion in this section will continue in like manner. However, I will discuss the hypotheses which are more central to the ambition theory outlined in the first chapter.

In the following section I discuss some hypotheses by which we can help to identify bureaucrats according to their ambition.

As a bureaucrat becomes older we would expect him to be more concerned with keeping the job that he has than with moving to a new one with additional responsibilities. If a man has had little success in the past in gaining promotions, for example, he will view his present or future chances of moving to a better, more responsible, higher paying position as being fairly low. The older an official is, the more likely he is to become a conserver.²⁴ As he gets older, his chances for really substantial future advancement or achievement of any kind are reduced unless he is near the very top of the hierarchy. The great efforts required in taking the initiative to change careers or positions are more difficult for an older man.²⁵ In Schlesinger's terms the degree of progressive ambition declines with increasing age.²⁶

Hypothesis B-1: The proportion of directors having ambitions identified as those of conservers increases with increasing age; the proportion of directors having ambitions identified as those of climbers decreases with increasing age.²⁷

A number of studies in ambition theory have verified this hypothesis for politicians. In a detailed analysis of the age proposition, Hain found that among state legislators the rates of progressive political ambitions and of progressive subsequent political careers declined as age increased. The rates of static political ambitions and of static political careers increased with age.²⁸ Prewitt and Nolan report finding support for Schlesinger's age hypothesis as does Prewitt in his book.²⁹ Mohr's research lends some support to this age hypothesis. He found less innovation among the older health

directors. He also found that older health officers were less likely to feel that the position of health officer should be an active one in persuing support for public health objectives than the younger officers.³⁰

Bureaucratic ambition theory suggests that those with climber ambitions will take advantage of employment opportunities to increase their salary and professional prestige and position. They will take advantage of new job opportunities, be more willing to take a chance or risk change to improve their position than will those without such ambition. Also as conditions in an organization are such that they frustrate the goals of a climber, e.g. the organization declines in size or grows more slowly than others of a similar nature, or lacks resources, the climber is more likely than the conserver to leave. Downs argument implies that climbers will be more likely to change jobs hence they will experience a greater job turnover in their careers than conservers.³¹ Conservers are change avoiders, according to Downs, and we would expect climbers to be more willing to make or contemplate a change in jobs than conservers. When a given bureau grows faster than other comparable organizations, many climbers jump into it from elsewhere. Conversely, if it contracts or grows more slowly than other organizations, climbers tend to jump out of it.³² One would expect to find climbers attempting to move to the larger organizations where salary and other advantages are greater. And in doing so they may have found it necessary to change jobs a number of times. Conservers are more likely to put up with a frustrating situation than will climbers. To the conserver, the

cost of changing jobs relative to the benefit, is less than some other strategy such as lowering aspirations. Stated as an hypothesis then, we have:

Hypothesis B-2: Climbers are more willing to change jobs than conservers.

The public health department director who has an advanced degree in public health is in a position to have more information about new programs and techniques in this field. He will also have closer ties with a professional school of Public Health and other public health professionals. We can also expect him to be more concerned about implimenting the professional goals of this group than someone who does not have an advanced degree in the profession. Here we are considering the professionalization of the director. In a test of ambition theory among city councilment, Gordon Black found that those with a greater commitment to a career in politics had more completely adopted the norms of their profession.³³ A similar situation could be expected to exist with public health directors. The degree of commitment that the individual has toward his profession is probably related to other aspects of his career and career goals.

Hypothesis B-3: Directors with an advanced degree in public health are more likely to be climbers than are those directors without an advanced degree.

Directors without an advanced degree in public health are more likely to be conservers than are those directors with an advanced degree.

The public health officer who has come into public health after a period of time in private practice is more likely to want a

stable position and have less interest in rising to great heights in the profession than the young M.D. just entering the field from medical school. In addition, the physician who has spent several years in private practice will have a different set of professional standards and contacts, and a far different belief about the proper role of public health in society. His social philosophy is more likely to be one which views the proper role of public health as being rather limited. In fact the length of time that the director has spent in private medicine should be related to his attitudes toward the proper role of public health in a society. So we would expect the presence of a career in private practice to be negatively associated with a director's desire to obtain a position of great responsibility and prestige in public health.

Physicians who have changed from private practice to a public health career are likely to have different professional goals than the physician who goes into public health while in medical school or immediately after obtaining his degree. His age for one thing is likely to be different. The change may have been made for reasons which cause us to describe him as a conserver. Public health, for one thing, may be viewed by many as a much less demanding profession than private practice.³⁴ The physician going into public health at an early age will probably want to build a long range career in this profession. He will more likely be a climber than a conserver. But those who have obtained an advanced degree will have made a greater investment in public health than those without an advanced degree.

Two hypotheses will be tested from this discussion above:

Hypothesis B-4: Those public health directors that have maintained a private practice are more likely to be conservers than those who have not had any private practice experience. Those without private practice are more likely to be climbers than those with private practice.

Hypothesis B-5: As the length of time the health director spent in private practice increases, the degree of climber ambition will decrease, and the degree of conserver ambition will increase.

Those health officers in Larry Mohr's study with many years of private practice took a conservative view toward the proper activities of public health. Mohr also found that the correlation between innovation of the department and the number of years that the health officer had spent as a private medical practitioner was strong and negative.³⁵

Director's Background and Departmental Innovation

The hypothesis in this section provides a transition from the director's background to departmental innovation. This hypothesis suggests associations between these background variables and departmental innovation but do not include the measures of climber or conserver ambition. Two final sections of the study investigate models which include links among all three of these factors--director's background, director's ambition, and departmental innovation--as well as departmental resources. Hypothesis C-1 summarizes the relationships between the background variables and innovation. These relationships are explained and elaborated in a section in Chapter IV.

Hypothesis C-1: Directors with experience in private practice and directors without advanced degrees in public health will tend to be associated with less innovative departments than will those directors without experience in private practice and those directors with advanced degrees in public health.

The age of the director and the number of years of private practice experience of the director will be inversely correlated with the innovation of the department.

Types of Directors' Goals and Types of Departments

Hypotheses in the following section connect the directors with the type of department in which they are most likely to be found. They indicate how officials are likely to be found in different types of departments according to their, the directors, goals and how they may affect that organization's innovative output. Downs argues that bureaucrats of different types will be more or less likely to be found in organizations with different characteristics. I will develop and add to these arguments and test some of these hypotheses from Downs.

Although the director who is identified as a climber is probably going to be innovative, both as a strategy to improve his chances of advancement and because it will generally be less costly for him to do so than for the conserver, the hypothesis that climbers will be found in the innovative departments can be made on other bases as well. Climbers are likely to aspire to those departments which are innovative because of the factors which make them innovative. That is, larger departments with more resources are predicted

to be the more innovative departments. But climbers are expected to aspire to be directors of larger departments because of the salary, prestige, and opportunities which these departments offer. Climbers in smaller departments may have to rely on innovation as a strategy to improve their chances of reaching the larger departments whereas the climbers in the larger departments will find them to be innovative to a great extent anyway.

Although we may find a number of climbers in smaller departments, a number of them will have reached the larger departments. Something that Schlesinger emphasizes more than Downs is the fact that opportunities influence ambitions. That is, ambitions develop. This is an idea central to much of Herbert Simon's work. He feels that aspiration levels are conditioned.³⁵ We could expect someone who is successful in a larger department and sees the opportunities it affords him to become a climber. That is, he may want to go on further as he has successful experiences. So we may find some directors expressing climber ambitions only after having reached certain positions. There may be a certain amount of ego protection here also. A director who is predisposed to be a climber because of his background may not express the desire for a climber position until he has some experience which brings him to realize that some higher level position is a realistic aspiration for him.

Hypothesis C-2 of this set is taken from Downs' notion that the bureaucrats will be attracted to an organization in which it is most probable that they can obtain their goals.³⁷ However, the implication from Schlesinger's ambition theory is that aspirations

develop. This is supported by some psychological studies also.³⁸ One difference in Downs' approach and ambition theory is that Downs seems to claim that climbers seek out larger organizations. This may also be implied in ambition theory but in the latter the development of aspirations is important. Opportunities give rise to ambitions. In Downs ambitions are more predetermined.³⁹ Either way we would expect the directors of larger public health departments to be climbers rather than conservers.

For those climbers in the smaller departments, we would expect them to be innovative. So, whereas I have hypothesized that resources and innovation will be positively associated if the type of ambition is controlled, I will also hypothesize that the type of ambition and innovation are related if the level of resources is held constant.

The discussion then leads us to expect an association between the degree of climber ambition and the size and resources of the department. However, this association might not be very strong. Some of those with climber ambition may be on the way up, so to speak, and will still be in the smaller departments. If they stay here long, though, they are likely to become conservers unless they can change the nature of their department. The aspirations of these directors in smaller departments may still be developing. At any rate the following associations are predicted between size and resources and types of ambition.

Hypothesis C-2: There will be a positive correlation between the degree of climber ambition of the director and the size and resources of the department.

There will be a negative correlation between the degree of conserver ambition of the director and the size and resources of the department.

Ambition and Innovation

I have argued that climbers rather than conservers are likely to be found in larger departments. It is these departments which are also expected to be the most innovative. So a positive correlation between the degree of climber ambition and innovation is expected. Conversely, a negative correlation between conserver ambition and innovation is expected. But in order to hypothesize that directors that are climbers will be associated with innovative departments because they use innovation as a means to obtain their goals, some additional arguments need to be made.

Because a public agency usually has no markets, its members cannot be directly appraised in terms of their contribution to the value of its output or to the profit of agency or bureau. In order to be promoted or gain other goals an official needs to follow other strategies. Downs lists three strategies that climbers can follow. These are promotion, aggrandizement, and jumping or moving to a new job.⁴⁰ These in turn enable the climber to gain more prestige, power, and money. There is some empirical evidence which indicates that innovation is a rational strategy for the climber. Evidence also indicates that those persons with attributes which I have described as climber attributes are associated with innovation.

Blau found, in a study of two public bureaucracies, an individual's material and status interests to be associated with innovation. He also found that the more competent bureaucrats were more amenable to change.⁴¹ Becker concluded that the public health director's desire to maintain or increase prestige and professional status motivated him to be innovative. He found that it was prestigious among local public health directors to be known as an innovator and that innovative directors maintained a central position in communication and opinion networks among public health professionals. However, Becker concluded that it was innovation that created the director's position in this network, not the position which determined innovation.⁴²

In Mohr's analysis of innovation, he concluded that after the solution of immediate problems the quest for prestige rather than the quest for organizational effectiveness or corporate profit motivated the adoption of most new programs and technologies.⁴³ He referred to this as slack innovation. He inferred that slack innovation in Public Health departments would be innovation motivated largely by a desire for prestige and professional status on the part of the health officer and other health department staff members.⁴⁴ Mohr also concluded that large departments had a strong tendency to adopt a variety of innovative programs as this brought professional approval to its staff.

The visibility of the health director is probably an important factor in his upward mobility. There are studies which have assessed the importance of the visibility of a manager to his career.⁴⁵ If

innovation brings the director professional prestige and attention, it would certainly increase his visibility to others in the profession. We would expect a director wishing to increase or maintain his prestige to consider this option. The climber would be anxious to maximize prestige for its own sake but also to increase the other goals he has. In addition the climber will find it easier to innovate because of his professional contacts and information sources.

The climber, by hypothesis, has a greater commitment and investment in public health than a director who is not a climber. If he has expended the effort to get an advanced degree he will want to get a return on this. But by deciding to go into public health at an early point in his career, the physician has incurred some opportunity costs; that is, he has foregone a possibly very lucrative career in private practice and will want to make his investment pay. The climber will also be more apt to view himself as a professional in the field of public health. His orientation will be toward other professionals and he will want to implement the goals of his profession and of the people who are respected in his profession. These will be the persons for whom it will be important to the director to make a good impression, that is, to be thought of and viewed as a progressive director.

Some research in managerial mobility in industry has emphasized the importance of the visibility of the manager to his upward mobility. This may be a general phenomenon that applies to most types of managers or directors at all but the very top levels of management. At any rate, the people to whom the climber's reputation is important, such

as public health officials in the state agencies, Schools of Public Health, his colleagues in other departments, and federal agencies, are concerned about the swift adoption of new techniques and programs in public health.⁴⁶ Climbers can be expected to act as if they are responding to the opinions and evaluations of this group.

The other hypothesis in this set will be discussed in greater length after those in the first sets have been tested. The hypothesis is stated here also.

Hypothesis C-3: The degree of climber ambition of the director will be positively correlated with the innovation of the health department. The degree of conserver ambition will be negatively correlated with the innovation of the health department.

Research Design

This section will describe the units of analysis, the data, and the methods of data collection. A detailed description of the operational measures of each of the variables will be delayed until the chapters which describe the testing of the hypotheses.

Data were collected on local--city, county, and district--health departments in Michigan. Budget data on the departments was gathered from Public Health Department records at the State Department of Public Health in Lansing. Population, revenue, and expenditure data for counties--the basic geographical units for the departments' jurisdiction--were collected from the Local Government Budget Document of the Department of Treasury of the State of Michigan. The data were for the years 1968 through 1971. A two part mail questionnaire was sent to each department in the summer of 1972.

The first part of the questionnaire solicited data on program activities as well as recent expenditure and budget data of the departments. The second part of the questionnaire sought data from the director of each department. Deputy directors were also requested to fill out and return a copy of the second part of the questionnaire. Of 49 questionnaires sent to departments, 40 were returned. Thirty-nine of the 46 directors and deputy directors returned the questionnaires. However, two of these were not usable as not enough information was included on them. I sought information about the directors' employment experience, training, tenure, satisfaction with present job, and desire for other positions among other topics. Data on departments and directors were supplemented by State Department of Public Health records and publications. All data were collected during the spring, summer, and fall of 1972. Questionnaires were coded and the data keypunched during the fall of 1972.

The data set includes all local public health departments in existence in Michigan during the years 1966-1972 inclusive. A subset of these which existed at the time of the questionnaire mailing and the directors of the departments is the basic set of elements upon which analysis will proceed.

At the time the data were collected there were forty-nine public health departments in Michigan, ranging in size from seven to 293 and serving populations which varied from 28,000 to 1,511,000. Although there were three city health departments, the basic jurisdictional and governmental unit for health departments is the county. There are 83 counties in Michigan and each, by law, must be served

by a public health department, either its own or in association with one or more other counties in a multi-county or district health department. Each county therefore contributes to the maintenance of a health department and receives the services of one.

In 1972 there were three city health departments; other city departments previously functioning had combined with the county departments of the counties in which the cities were located. Several departments were multi-county units. During the time covered by the analysis, the counties comprising these departments changed. In the coding of the data, each combination of counties making up a department is uniquely identified as a different department. Population sizes and other county data were combined for each county in the multi-county departments to make up the data for those units. Analysis on the departments subsequently proceeded only on those departments which existed over the total time period of 1966 to 1972 and for which questionnaires had been returned. This left a total of 36 departments for analysis.

There are two measures of the major dependent variable innovation. Both of these are based on the adoption of public health programs. I have defined innovation as--the degree to which an individual or organization is relatively earlier to adopt a given practice than other individuals or organizations in their or its social system.⁴⁷ The first measure of innovation is based on the adoption times of four public health programs. The second is based on the adoption of nine public health programs.

The two previous public health studies discussed earlier defined and operationalized innovation differently than I have. My measure of innovation is most similar to one used by Jack Walker.⁴⁸ Walker based his measure on the time of adoption of a number of pieces of legislation by American state governments. The per centage of years that had passed between the first and most recent adoptions at the time that a particular state adopted a piece of legislation was used as an innovation measure for that state for that type of legislation. He did this for each of a large number of pieces of legislation and the average for the total set was taken to give an innovation score for each state.⁴⁹

I asked the health departments to respond to questions about two sets of programs. For the first set I chose a number which I had established were innovative or at least new to Michigan and had received some advocacy by professional public health organizations, the Michigan Department of Public Health, or both. The departments were asked to report the date, to the nearest month, that they had begun any activity in the innovative program area. The programs in the first set, although they were new, had been in existence for a few years. This, I reasoned, was necessary to insure that each department could have had a chance to adopt the programs. These six programs were family planning, drug abuse, alcoholism control, on site multi-phasic screening, alcohol-highway safety, and migrant health.

The primary innovation measure was based on the time of adoption of four of the original six programs. Two of these were

such that they were not appropriate for the innovation index. The number of departments, moreover, to which they were relevant was rather small. Rogers makes a good case for adjusting for those practices which do not apply to a group of potential adopters.⁵⁰ The two programs omitted were Migrant Health--many areas in the state do not have any migrant workers--and the Alcohol-Highway Safety Program. This latter program was removed for consideration because, although it is innovative and is relevant for all departments, those departments initially conducting the program (and all of those conducting the program at the time of the questionnaire) were especially selected by the Michigan Department of Public Health. Thus there was a large factor in the selection of departments to adopt the program which was not under the control of the local department.

The adoption times for each program were scored so that they ranged from 0 to 100. This has the advantage of weighting each program equally.⁵¹ The score for each program was added to obtain a total score for each department. Since this index was based only on the time of adoption, those departments adopting the program last would receive the same score as a department not having adopted the program. So an additional weight was added for the fact that the program had been adopted by the department. The following paragraphs give a detailed description of the calculation of the primary innovation, or speed of adoption, index.

For each of the four programs, the number of years between the first adoption and the last adoption by a Michigan public health

department was determined. Then one minus the per cent of years into this period that a department adopted the program was calculated for each department. This was multiplied by 100 (to give the score in whole numbers). Then 10 was added to each score for those departments which had adopted the program. By way of an example: if the first department to adopt a family planning program did so in 1966 and the last department did so in 1972, the time span for adoption would be six years. Then if department number fifteen adopted the program in 1968 or two years into this period, its innovation score for that program would be $1 - (2/6)_x(100) = 1 - .3333_x(100) = 66.67$. The first department to adopt the program would get $1 - (0/6)_x(100) = 1(100) = 100$ and the last adopter would get $1 - (6/6)_x(100) = 0$. Those departments which had not adopted the program would also get a score of 0. To distinguish the last department adopting each program from those not having adopted the program, and to give more weight to adoption itself, 10 was added to the department's index for each adoption. Department number fifteen would then get a score of $66.67 + 10 = 76.67$ for this program. If a department had not adopted the program but was in the process of planning for the adoption, 5 was added to the department's score.

The departments were asked to report the time of adoption to the nearest month so fractional parts of a year were also involved in the computation. However, I used only even years for simplicity in this example. A score for each of the four programs was computed for each department and then the scores for the four programs were added to form the index for the primary innovation measure. The

range of this index was 5.0 to 308.05. A department could accumulate from 0.0 to 110 points for each of the major programs making the possible range of the primary innovation score--speed of adoption--0.0 to 440. A discussion by Rogers shows that although computing an innovation measure by summing the number of adoptions only is closely correlated to time of adoption, indices based on time of adoption are much more sensitive and can be based on fewer practices.⁵²

By scoring the programs from zero to 110, each is weighted the same and the length of time covered by the adoption periods, if different, does not weight one program more than another.⁵³ A second measure of innovation was based on the responses to the second set of programs. (See Appendix A for these programs.) This set of programs consisted of nine programs which were very new to the field of public health, at least in Michigan, although each program had been adopted by at least one department. The secondary measure of innovation was based on whether the department had adopted each program or not and the score on this index was simply the number of programs adopted by the department. This index was correlated ($r = .40$) with the primary innovation measure.

All of the programs in the second set were much more recent developments than those in the first set. These programs were some of the newer and currently more popular programs in public health at that time. In order to conclude that the director had some influence on the adoption of programs by the department, it was necessary to choose programs which were adopted during the tenure of the health department director. So these very late programs were

chosen. If the departments for analysis were limited to those whose directors had been in their positions during the entire time covered by the study, that would have substantially reduced the number of departments. There are additional advantages in using two innovation measures. It is useful to know the extent to which each of these measures tap innovation and the correlations of the independent variables to each of the measures. The secondary measure still adheres to the conceptual definition of adoption in that those early adopters of the new programs will be the ones who are innovative.⁵⁴

Therefore, the analysis which deals with the departmental characteristics, without including the director variables, uses both measures of innovation as dependent variables although the speed of adoption measure is considered to be the major index of innovation. This provides an aid to assessing validity also. In the final sections which assess the effect of the director on innovation, the secondary innovation measure only is used so that the greatest number possible of the departments would be included in the analysis.

I imply in the study that directors with certain characteristics will be attracted to innovative departments. So one of the hypotheses is that directors with these characteristics are more likely to be found in innovative departments. We would expect a correlation regardless of when the director arrived in the department. That is, if climbers are attracted to innovative departments and they also influence departments to be innovative, then there should be a correlation between the indicator of ambition and the measure of innovation regardless of when the director arrived at

the department. But the argument goes on to claim that this type of director also helps to cause the department to be innovative. Hence I want to assess the evidence in support of the contention that the director is an important factor in the innovativeness of the department. While it does not prove causation, it is necessary to show that the director was in the department at the time the innovative programs were adopted.

Background and some attitudinal data were collected from the then current directors of the local health departments. I was primarily interested in their employment history, extent of public health training and experience, desire for public health positions other than the one they currently held and personal and professional goals dealing with public health. The respondents were asked to rank order a number of public health positions in terms of their preference for them. This, I reasoned, would give me a measure of the directors' expressed ambitions. The directors were also asked if they preferred another position to the one they currently held and were asked how content they were to remain in their present position until retirement. Age was also determined. Although the return rate of the questionnaires was high, it was not total. In many cases, questionnaire data was supplemented by records of the State Department of Public Health.

The total number of personnel and the number employed in each specialization were also determined from summary statistics and records compiled by the Bureau of Local Health Administration.

The operationalization of variables and other specifics of the data will be discussed as needed in the next two chapters as I present the testing of the hypotheses.

The previous discussion has laid out the elements of a theory or model of organizational innovation as it applies to local Public Health Departments. Schematically the elements and the influences among them may be connected as shown in Figure 2-1.

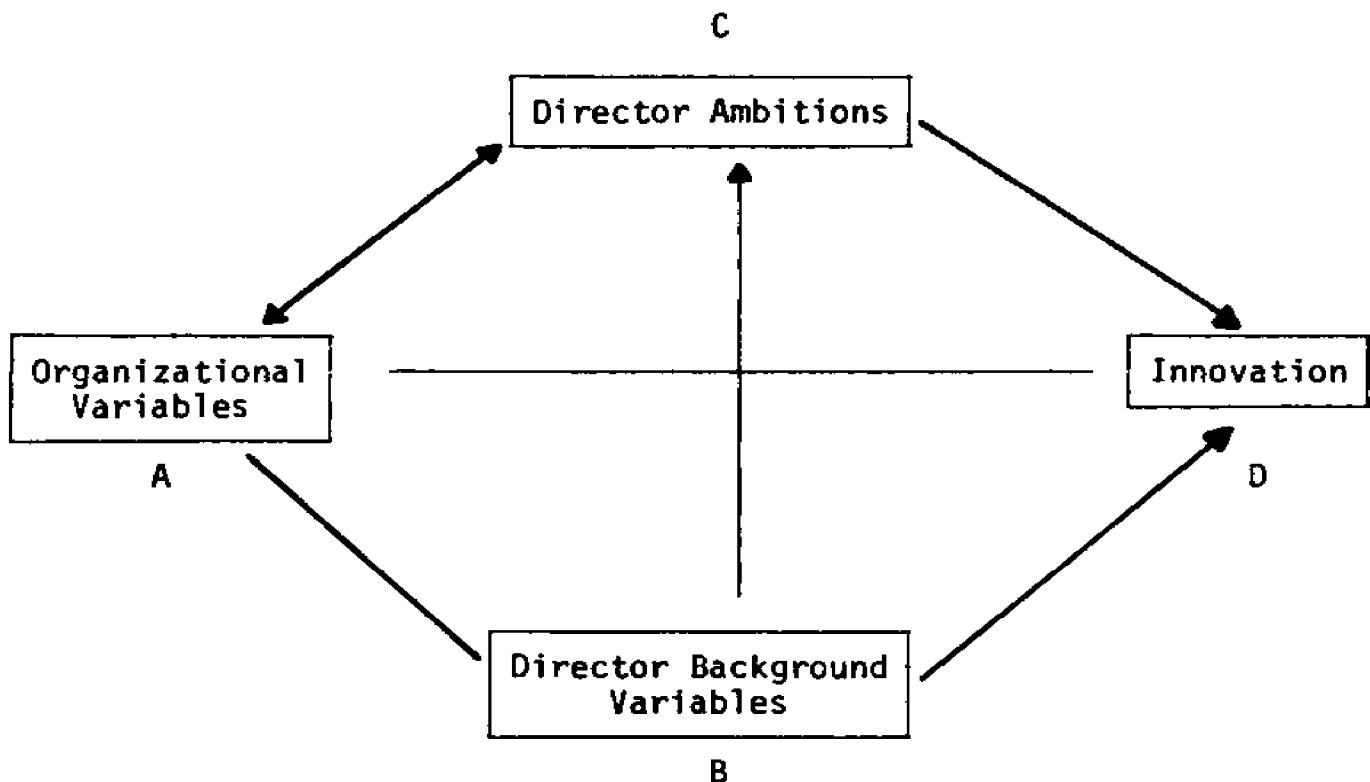


Figure 2-1.--Direction of Influence Among Elements of a Model of Innovation.

In the analysis I will be concerned with testing the hypotheses which establish the links between these sets of factors. The first section of analysis will treat the link A--D, between organizational

factors and innovation. The second section will attempt to establish the link B--C and test a number of ambition hypotheses drawn from ambition theory, Inside Bureaucracy, and the theory outlined earlier. I will investigate, in this section of the analysis, the correlates of ambition.

A third step will be to test hypotheses linking C--A, C--D, and B--D by bivariate hypotheses. This will be followed by multivariate analysis dealing with the links among A, B, C, and D concurrently. One of the purposes of the study is to determine how ambition influences innovation and some three-variable models will be presented in that section. A final section will include the director's background characteristics in a four-variable model which will involve links among the parts of the model in Figure 2-1.

I suggest that the organizational factors will be related to innovation regardless of the type of director. So analysis begins with these factors. However, the leadership of the director of the organization, the public health department, will be important for innovation in the department. It is here that the ambition theory aspects of Downs, Schlesinger and others are important. I suggest which types of directors we may expect to be more innovative, how these directors may be identified, and in which types of departments they may be found.

If it turns out that departments with greater resources are innovative regardless of the type of director, this suggests that the director variables will have more effect on innovation at different

values of the department variables. This hypothesis will be tested in the final two sections of analysis.

To reiterate, the major purposes of the study are to account for variance in innovation and to test a general theory taken from Anthony Downs Inside Bureaucracy and ambition theory in elective politics.

Chapter II--Footnotes

¹See Chapter I, pages 20 and 21 for a discussion of quasi-deduction and partial formalization in social science theory.

²Mohr, American Political Science Review, Mytinger, op. cit.

³Mansfield, op. cit.; Mohr, op. cit.; Mytinger, op. cit.

⁴Cyert and March discuss the concept of slack. See A Behavioral Theory of the Firm (pp. 260-265).

⁵See Mohr, op. cit., p. 119.

⁶Ibid., p. 120; Mytinger, op. cit., pp. 181-183.

⁷Mohr makes a similar argument. "Small departments are limited in the programming they are able to do because of a limitation on the number of different activities into which one person's time may be fragmented. Large departments have an advantage because their greater number of personnel allows them to assign at least one employee to each of a great many services." (American Political Science Review, pp. 121-122.)

⁸Richard A. Smith, "Community Structure and Innovation: A Study of the Effects of Social Structure on Program Adoption and Implementation" (unpublished Ph.D. dissertation, Cornell University, Ithaca, New York, 1973), p. 15.

⁹Ibid., p. 16.

¹⁰James Q. Wilson, "Innovation in Organizations: Notes Toward A. Theory," in Approaches to Organizational Design, ed. James D. Thompson (Pittsburgh: University of Pittsburgh Press, 1966), pp. 193-218.

¹¹Smith, op. cit., p. 18.

¹²Walker in Jacob and Vines, op. cit.

¹³Robert L. Crain and Donald E. Rosenthal, "Community Status as a Dimension of Local Decision-Making," American Sociological Review, 32 (December 1967), pp. 970-984; and Smith, op. cit., p. 18.

¹⁴Rufus P. Browning, op. cit., pp. 138-142.

¹⁵Ibid.

¹⁶Smith, op. cit., p. 15.

¹⁷Jerald Hage and Michael Aiken, "Program Change and Organizational Properties, A Comparative Analysis," American Journal of Sociology, 72 (March, 1967), pp. 503-519.

¹⁸Emile Durkheim, The Division of Labor in A Society, translated by George Simpson (New York: The Free Press, 1933), pp. 267-270.

¹⁹Mohr, op. cit., p. 119.

²⁰Ibid., p. 120.

²¹Mytinger, op. cit., pp. 182, 183 and 208.

²²Cyert and March, op. cit., refer to this type of resource as slack, pp. 278-279.

²³Downs, op. cit., pp. 5-24 and 88-101.

²⁴Ibid., pp. 96-101.

²⁵Ibid.

²⁶Schlesinger, Ambition and Politics, pp. 9, 10, and Chapter 10.

²⁷Downs, op. cit., pp. 266-267 and 21 and 28.

²⁸Paul Hain, "American State Legislators' Ambition and Careers: The Effects of Age and District Characteristics" (Unpublished Ph.D. dissertation, Michigan State University, East Lansing, Michigan, 1971). Hain's research was done with data from interviews with incumbent state legislators in four American states. This data was gathered in 1957 by John Wahlke, Heinz Eulau, William Buchanan, and Leroy Ferguson, The Legislative System (New York: Wiley, 1962). Hain gathered data in 1970 on the post-1957 careers of those same legislators for his analysis.

²⁹Kenneth Prewitt, The Recruitment of Political Leaders: A Study of Citizen Politicians (New York: Bobbs-Merrill Company, 1970), pp. 186-188, tested a variant of the hypothesis relating age and the stated ambitions among San Francisco Bay Area city councilmen. Clustering respondents by five-year age groups he found that the percentage of city councilmen with non-discrete ambitions declined continually through age 56.

Kenneth Prewitt and William Nowlin, "Political Ambitions and the Behavior of Incumbent Politicians," The Western Political Quarterly, XXII, No. 2 (June 1969), pp. 298-308, concluded that age was "negatively and linearly related to political ambitions among incumbent officeholders."

³⁰ Mohr, dissertation, op. cit., pp. 154-155.

³¹ Downs, op. cit., p. 100 and Chapter 2.

³² Ibid., p. 96 and Chapter 11.

³³ Gordon S. Black, "A Theory of Professionalization in Politics," American Political Science Review, 64 (September, 1970), pp. 865-878.

³⁴ See footnote 68, page 24, Chapter One.

³⁵ Mohr, op. cit., p. 157.

³⁶ Mack, op. cit., p. 62.

³⁷ Downs, op. cit., Chapters 2 and 9.

³⁸ Mack, op. cit., pp. 61-65.

³⁹ Downs, op. cit., Chapter 9. Although Downs has a section titled "How Officials Become Conservers," pp. 98-99, he has no comparable section for climbers.

⁴⁰ Downs, op. cit., pp. 92-96.

⁴¹ Peter Blau, The Dynamics of Bureaucracy (Second Edition Revised; Chicago: University of Chicago Press, 1963), pp. 241-249.

⁴² Marshall Becker, "Factors Affecting Diffusion of Innovations Among Health Professionals," American Journal of Public Health, 60 (February, 1970), pp. 297-302.

⁴³ Mohr, American Political Science Review, pp. 122-126.

⁴⁴ Ibid.

⁴⁵ Irwin Rubin, David Kolb, and James McIntyre, Organizational Psychology (Englewood Cliffs, N.J.: Prentice-Hall, 1971).

⁴⁶ Becker, op. cit.

⁴⁷ Everett Rogers and A. Havens, "Predicting Innovativeness," Sociological Inquiry, 32 (1962), pp. 34-42; Everett Rogers, Diffusion of Innovations (New York: Free Press of Glencoe, 1962).

⁴⁸Walker, in Jacob and Vines, op. cit.

⁴⁹Ibid.

⁵⁰Everett Rogers and L. Edna Rogers, "A Methodological Analysis of Adoption Scales," Rural Sociology, 26 (1961), p. 335.

⁵¹This method was used instead of obtaining standard scores for each practice and summing them for the departments. Advantages of this method are discussed by Robert Jackman, "On the Relation of Economic Development to Democratic Performance," American Journal of Political Science, 17 (August, 1973), pp. 611-621, and Walker, op. cit. A critique of standardized indices is Jesse F. Marquette, "Standard Scores as Indices: The Pitfalls of Doing Things the Easy Way," Midwest Journal of Political Science, 16 (May, 1972), pp. 278-286.

⁵²Everett Rogers, "Categorizing the Adopters of Agricultural Practices," Rural Sociology, 23 (1958), p. 353.

⁵³Walker, op. cit.; Rogers, Rural Sociology (1958), p. 353.

⁵⁴Rogers shows that this type of scale is an estimate of the time of adoption. He also claims that adopters tend to make those adoptions early. Rogers, op. cit., p. 350.

CHAPTER III

HYPOTHESIS TESTING: DEPARTMENTAL CHARACTERISTICS, DIRECTOR'S BACKGROUND AND DIRECTOR'S AMBITION

The testing of the first two sets of hypotheses are discussed in this chapter. The departmental correlates of innovation are investigated and the hypotheses relating the characteristics of the director to his ambitions are tested. Multiple regression and correlation analysis are performed using the variables in this set of hypotheses.

Health Department Characteristics and Innovation

The first set of hypotheses to be tested is set A which relates the characteristics of the health department to the measures of innovation. The hypotheses in set A are re-stated in summary form here:

- Hypothesis A-1: The level of resources will be positively correlated with innovation in local public health departments.
- Hypothesis A-2: The size of the department will be positively correlated with innovation in public health departments.
- Hypothesis A-3: The number of occupational specialties will be positively correlated with innovation in public health departments.
- Hypothesis A-4: The degree of professionalization of the department will be positively correlated with innovation in public health departments.

- Hypothesis A-5: The size of the population served will be positively correlated with the innovation of the public health department.
- Hypothesis A-6: The change in resources will be positively correlated with innovation in public health departments.
- Hypothesis A-7: The change in size will be positively correlated with innovation in public health departments.
- Hypothesis A-8: The change in population served will be related to the innovation of public health departments.

The first hypothesis relates resources to innovation.

Resources refers to monetary resources; personnel are, of course, organizational resources also but are treated separately. My indicator of resources was the total budget for the department for the years 1968 and 1971. Although the figure for 1968 is the primary indicator of resources, as well as for the other independent variables in this set, I use and report the results for the figures from 1971 also. This 1968 budget figure should be a good indicator of monetary resources available to the department.¹ I also had wanted to use a figure for the early years of the time period under analysis. Budgets for government agencies of any type are usually highly correlated over time so the budget for 1968 should be a good indicator of the budget for other years in the analysis. To check this, I correlated the figures for total budget for the years 1967 through 1971 with each other. The lowest of these correlations was $r=.93$. All other correlations exceeded this. The highest correlation was $r=.98$ for the budgets of 1970 with 1971. I also examined the correlation of innovation with some alternative indicators

of resources such as the local appropriation from the county or city to the health department, the total county revenue, the State Equalized Evaluation of the property in the jurisdiction of the health department, and some per capita resource indicators.

Although the major independent variables were correlated with innovation for each year that they were available, these figures for the two years 1968 and 1971 will be reported here. I wanted to use a year early in the time period covered by the analysis and a later one. Size of the department, specialties, and professionalization indicators for 1968 were used as this was the first year that they were available. The document from which these figures were taken was not prepared by the State Department of Public Health until 1968 and then was done on a yearly basis. So 1968 was the first year for which these figures were made available in summary form by the State Department of Public Health.

Although budget and population figures were available for 1967, size figures were not, so to be consistent with the years of the indicators 1968 was chosen as the early year for analysis. 1971 was used rather than 1972 as there was a more complete set of data for 1971 than for 1972. Not all of the budget, population, or departmental personnel figures for 1972 had been made available by the state when analysis was begun.

The figures for two different years were analyzed to note any differences in the effects of independent variables on innovation as well as to note the changes in the independent variables themselves. I think that by reporting figures for two points in

time greater validity is provided to the relationships which are found and to the study as a whole. It was also desirable to use a later figure when the analysis was completed using the director variables with the departmental variables.

The independent variables of resources, size, and population served do not need any further explanation. The correlation of the alternative indicators of resources with innovation will be reported in a later paragraph. However, the major measure of resources available to the department is the total budget, from all sources for the year indicated, either 1968 or 1971.

The local appropriation is not an adequate measure of resources as it does not include all of the funds available to the health department. There are state and federal formula funds as well as possible state and federal grants. The local appropriation makes up the major share of the money available to most local health departments in Michigan, however, and should be found to be related to innovation, although not as strongly as the total resources. The total appropriation for the larger departments will undoubtedly be larger and will contribute to the departments' total resources. The same reasons that enable a department to be innovative may also cause it to have a large local appropriation, i.e., large population and size. However, one way that innovation can be funded is by seeking out state and federal grants. These, of course, will not be reflected in the local appropriation.

Size is the total number of employees of the health department. Population is the total population of the jurisdiction of

the health department. More elaboration of the measures of specialties and professionalization is necessary. I have discussed two aspects of the occupational make-up of the department besides its size: occupational diversity or differentiation and professionalization. By diversity I mean the number of different occupational categories in which at least one person was employed. I refer to this variable as occupational specialties or, simply, specialties. The State Department of Public Health summarizes and publishes this information each year, since 1968, so the information was taken from their figures as they had categorized them.

Professionalization refers to two things (1) the number of employment categories which can be assumed to represent a professional affiliation. For this indicator, I took the number of employment categories for which training beyond the B.A. or B.S. degree was required and in which at least one person was employed. This would, I hoped, be an indicator of the number of professional associations to which the department maintained affiliation. It would at least be an indicator of the number of professional specialties which were represented in the department. (2) Professionalization also refers to the number of persons in the department who may be expected to be affiliated with a professional organization concerned with public health matters. To obtain this measure I took the number of persons in the professional categories and totaled them for each department.

Table 3-1 presents the simple correlations of the set of independent variables with the two measures of innovation. All

TABLE 3-1.--Simple Correlations Between Independent Departmental Variables and Innovation for 1968 and 1971.^a

		2	3	4	5	6	7	8
Resources	(1)	.96 .97	.92 .97	.86 .81	.83 .95	.92 .95	.49 .35	.52 .19 ^b
Size	(2)		.92 .96	.84 .84	.82 .83	.98 .96	.51 .43	.45 .39
Population	(3)			.76 .70	.77 .76	.94 .98	.40 .41	.24 .25
Number of Specialties	(4)				.85 .82	.77 .80	.33 .41	.52 .44
Number of Professional Specialties	(5)					.80 .82	.49 .55	.50 .29
Number of Professional Employees	(6)						.51 .45	.41 .36
Speed of Adoption (primary innovation)	(7)							.40
Adoption (secondary innovation)	(8)							

^aThe first row of double figures is for 1968, the second for 1971.

^bSubsequent analysis showed that a curvilinear relationship existed between resources 1971 and the adoption measure of innovation. The resource variable was transformed to resources = Log 10 (resources 1971). The correlation of the transformed variable with innovation was $r = .42$ and $r = .32$ for speed for adoption and adoption respectively. The use of this transformed variable is discussed at length in Chapter IV.

of the correlations are in the predicted direction, although some are certainly larger than others. The first line of the double row of figures is for 1968 and the second line of each row is for 1971. Population is not very strongly correlated with the adoption measure of innovation nor is resources for 1971 correlated very strongly with adoption. Subsequent analysis on resources 1971 using a transformation showed that this variable was correlated as strongly with innovation as the resource measure for 1968.² I conclude, though, that there is support for hypotheses A-1 through A-5.³

Note that the independent variables are highly inter-correlated. This makes it extremely difficult to assess the unique effects of these variables on innovation. Social science data typically suffer from this problem.⁴ However, the multi-collinearity is seldom as high as it is here. While this problem can be minimized by employing only those variables for which this covariation is least, this may conflict with other criteria of the research, such as selecting the best operational indicators of the theoretical concepts.⁵ Analysis will continue in this section on this set of variables. In a later section many of them will be omitted due to this multi-collinearity.

I also found that the size of the local appropriation to the health department was related to both innovation measures. Among the indicators of resources, it seems that the absolute size of the department's budget is a strong, and perhaps the most important, predictor of innovation.

Total county revenue for the county or district was also used as an indicator of resources available to the department. The correlation here was not very strong but in the direction predicted by the hypothesis.⁶ This, however, is only an indicator of a possible pool of resources for most county functions. The health department has to compete for a share of these funds with other departments and agencies. It seems that the resources of the department are more important for innovation to take place than are the resources of the jurisdiction of the health department. This may indicate a willingness of the departmental director to seek resources and to use them to innovate.

Given the high inter-correlations among the independent variables, it seemed that a number of them may have been measuring the same thing. Empirically this may be so although I have argued that each of the independent variables should have a separate effect on innovation. However, many of these variables are either a result of or a cause of the size of the department. For example, it is only the large departments which have large amounts of resources. Likewise it is the larger departments which have a greater number of professional specialties and professional employees. I probably have selected the mechanisms by which resources and size lead to innovation. Resources themselves do not lead necessarily to innovation but larger amounts of resources allow the department to hire specialists which will lead to innovation. Some attempt was made to partial out the effects of size and resources on the correlations of the other variables with innovation.

I attempted to determine if the effects of any of the organizational variables on innovation could essentially be determined by the others. The partial r between population and innovation with resources partialled out was $r = -.15$.⁷ This correlation is fairly small but indicates some independent effect of population on innovation. The negative partial could mean that the larger populations prevent innovation unless they are accompanied by more resources, which they usually are. Over the long run it is probable that population increases lead to increased resources which in turn makes innovation more likely. Much of the correlation between population and innovation can be accounted for by resources, however.

The correlation between resources and innovation is not merely due to their separate correlations with population. Controlling for population 1968 left a partial of $r = .33$ with primary innovation. It is apparent that resources by itself, is a more important predictor of innovation than is population. One may argue that population is primarily important in that it is correlated with resources.⁸

One way of looking at the effect of population is by the use of a three variable path diagram or causal model. There is a problem here due to the high multi-collinearity of the two independent variables but since I am not really generalizing to a larger population from a sample the problems are not as debilitating.⁹

The question is whether population has a direct effect on innovation or whether the effects of population are only through resources. That is, population may only effect innovation in that

higher population leads to higher resources which leads to more innovation. I assume that population is prior in time to departmental resources as measured by total budget; that is, level of resources has no effect on population. The two proposed models and the expected correlations are shown in Figure 1. If the correlation between resources and innovation were spurious, i.e., due to populations' correlation with resources and innovation, then controlling for population would cause the partial between resources and innovation to drop to zero. It is reduced but is still fairly large. The conclusion here is that a partially spurious relationship exists but one which contains a substantial direct influence of resources on innovation.

The resulting partial correlations support a model in which population has some direct effect on innovation and in which a substantial amount of the effect of population is due to increased resources which accompany large populations. See Figure 2 for an illustration of this model. However, if resources are controlled, population has a negative effect on innovation. That is, with an increase in population, if resources are controlled, innovation is dampened. This makes sense as it means that existing resources are spread out over a larger population.

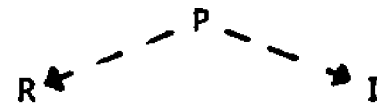
The partial correlations generally indicate that specialties, for 1968, does not necessarily lead to more innovation unless it is accompanied by a sufficient number of personnel and resources. The partials between specialties and innovation when resources and size were controlled were all negative. Controlling for size and resources



Expected
Partials

$$r_{PI.R} = 0$$

$$r_{RI.P} = .48$$

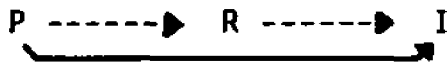


Expected Partials

$$r_{PI.R} = .40$$

$$r_{RI.P} = 0$$

Figure 3-1.--Path Diagram of Population, Resources, and Innovation for 1968.



Actual Partials

$$r_{PI.R} = -.15$$

$$r_{RI.P} = .33$$

Figure 3-2.--Path Diagram Supported by Actual Partial Correlations for 1968.

for 1968, I find that the partial between primary innovation and the number of employees in the professional categories is $r = .18$, indicating that this variable has at least some slight effect upon innovation independent of size and resources.

Multivariate Analysis of Department Variables

Multiple regression and correlation were also used to analyze this set of data. Step-wise regression was done for the independent variables for both years, 1968 and 1971 for both measures of innovation.¹⁰ All six variables were initially entered in a multiple regression equation. The multiple R for the six variables with the primary innovation measure, speed of adoption, was $R = .69$ for 1968 and $R = .70$ for 1971. For secondary innovation measure, adoption, these same variables resulted in $R = .83$ for 1968 and $R = .87$ for 1971. As much as 49% of the variance in primary innovation and as much as 76% of the variance in secondary innovation were accounted for by this set of variables (see Table 3-2).

The step-wise regression procedure was also run to pick the best combination of predictors of innovation. Since the independent variables were so highly correlated, some of them did not contribute much to the total explained variance in the multiple regression routine.¹¹

The changes in size, resources, and population with innovation were also analyzed with simple and multiple correlation routines. I have argued that increases may be used to innovate or indicate extra resources available for innovation but also that

TABLE 3-2.--Step-Wise Multiple Regression Analysis of Departmental Variables for 1968 and 1971
with Innovation.

Variables	r	R ²	b / S.E.	beta	Year	Innovation
Professional employees	.41		-494/474	-1.07	1968	Speed of adoption
Population	.40		-2.35/1.11	- .02		
Professional categories	.49		2651/1130	.72		
Specialties	.33		-1954/747	-1.07		
Size	.51	.48	829/371	2.73		
All variables ^a		.49				
F = 4.94; N = 36						
Professional categories	.55		.076/.10	.16	1968	Adoption
Population	.24		-.001/.0002	-1.89		
Resources	.52		.001/.0003	1.41		
Professional employees	.41	.68	.092/.043	.77		
All variables ^a		.69				
F = 14.7; N = 36						

TABLE 3-2.--Continued.

Variables	r	R ²	b / S.E.	beta	Year	Innovation
Professional categories	.55		3607/962	.89	1971	Speed of adoption
Resources	.35		-0.66/.22	-1.81		
Population	.41	.46	4.02/1.50	1.49		
All variables ^a		.49				
F = 8.32; N = 36						
Specialties	.44		.076/.098	.137	1971	Adoption
Resources	.19		-.0003/.0001	-3.112		
Size	.39	.74	.179/.024	3.29		
All variables ^a		.76				
F = 27.18; N = 36						

^aOther independent variables were not brought into the equation by the step-wise regression routine.

innovation is a possible strategy used by the director to obtain a larger budget.¹² Changes in the size of the department may indicate that new services are being added and may provide for additional personnel so that new services can be planned.

A large change in population over a short period of time may be related to a lower level of innovation, especially if the other factors do not change comparably. That is, with a sudden increase in population to be served without an accompanying increase in resources and personnel means that the existing resources and personnel must be stretched to handle these needs.¹³ While large population in itself is associated with more innovation, a large upward change in population will probably be associated with less innovation. However, a steady average increase in population over a longer period may very well be associated with more innovation. The correlations support the first part of this contention (see Table 5). The change in population from 1968 to 1971 is negatively correlated with innovation, although the correlation with secondary innovation is quite weak. All of the correlations for the change scores were in the expected direction, although they were not very strong. However, the multiple correlations of the change variables with innovation is quite high. Multiple R for change in resources, size, and population with primary innovation was $R = .75$; multiple $R^2 = .57$. For the secondary innovation measure, multiple $R = .37$ and $R^2 = .14$ (see Table 3-3).

A number of interpretations can be given here. One is that the director and his deputies are very active in seeking out resources

TABLE 3-3.--Step-Wise Multiple Regression Analysis of Changes in Selected Departmental Variables with Innovation.

Variables	r	R ² ^a	b / S.E.	beta	Innovation
Change in resources	.31	.09	3.88/.78	1.31	Speed of adoption
Change in size	.21	.10	-158/112	- .29	
Change in population	-.22	.57	-36/6.5	-1.03	
F = 12.15; N = 33					
Change in popularion	.21	.04	-.004/.002	- .46	Adoption
Change in resources	.19	.14 ^b	.0004/.0002	.55	
F = 2.33; N = 33					

^aR² is cumulative as variables are added.

^bChange in size was not brought into the equation.

and in innovating in those departments in which the resource change was largest. Innovation could be a strategy by the directors to obtain greater resources. Or resources may be obtained in order to innovate.

Summary of First Part of Chapter III

The hypotheses concerning the relationships of the organizational factors to innovation were all supported. The relationship of the total budget for 1971 with the adoption measure of innovation was rather low though. Additional analysis with resources for 1970 showed this latter variable to be as highly correlated with adoption as the other departmental variables. Analysis also showed that the relationship between resources 1971 and adoption was curvilinear and this variable was transformed with a logarithmic function. This transformed variable showed about the same correlation with adoption as did resources for 1968.

Multi-collinearity was so high among the independent variables that some of them can be considered to be measuring the same thing and are empirically almost equivalent.

Previous research shows that size and resources are quite highly correlated with innovation in organizations. Perhaps what I have done here is to show how these two factors account for innovation. Larger, richer organizations can and are likely to hire more specialists and professionals who can then suggest innovations to the department. Size itself is greatly dependent upon the monetary resources of the department. So in a way resources is perhaps the

single best indicator of the complex of factors which determine innovation in organizations. However, money itself does not necessarily lead to greater innovation. It is when this money is used to obtain appropriate personnel that the department becomes innovative.

The population of the community served by the health department is related to innovation but were it not for the greater resources and larger size which accompanies population this factor would apparently be a barrier to innovation. Likewise, if a department invests its resources in an ongoing activity, perhaps to serve a rapidly growing population, size and resources will not be strongly correlated with innovation.

As growth in population is accompanied by comparable increases in resources and size, we would expect increases in population to be followed by new programs, i.e., innovation. However, large or quick changes in population may be a barrier to innovation in that existing resources must be devoted to serving more people or even increases in resources must be channeled into meeting traditional needs of ongoing programs for larger populations. This would dampen efforts at innovation unless the larger population presented a severe need for a new program.

The results showed that with the changes in resources controlled, the change in population was negatively correlated with innovation, $r = -.69$ for speed of adoption and $r = -.32$ for adoption.

Director Ambition

Downs, Schlesinger, and others make a number of predictions and hypotheses about the attitudes, aspirations and behavior of individuals based on their goals. The purpose in the following sections is to test some of these hypotheses and to incorporate them into the present study of organizational innovation. In this chapter and the next I will (1) test some of the hypotheses from Inside Bureaucracy and ambition theory which support the schema which I have outlined; and (2) use the theory to indicate how characteristics of directors are related to innovation within public health departments. After testing a number of individual ambition hypotheses, I will relate individual director characteristics to departmental variables to help explain the variation in departmental innovation.

The set of hypotheses to be tested now are those in which the expressed ambition of the health department director is the dependent variable. In these hypotheses, I identify the ambitions of the directors and determine if certain other characteristics such as age, employment history, and training are related to these ambitions.

The hypotheses of this set are restated below.

Hypothesis B-1: The proportion of directors identified as conservers increases with increasing age. The proportion of directors identified as climbers decreases with increasing age.

Hypothesis B-2: Directors with advanced degrees in public health are more likely to be climbers than conservers. Directors without advanced degrees in public health are more likely to be conservers than climbers.

Hypothesis B-3: Directors with a past career in private medicine are more likely to be conservers than are those without any private practice. Directors without private practice are more likely to be climbers than those with private practice.

Hypothesis B-4: The number of years the director has spent in private practice will be negatively correlated with the degree of climber ambition and positively correlated with the degree of conserver ambition.

Hypothesis B-5: Climbers will be more willing to change positions than conservers.

The data to test these hypotheses are taken from the mail questionnaire.¹⁴ One set of questions asked the respondents to rank order a number of positions in public health according to their, the directors', preference for them. In all eight positions were listed for ranking. The full set is given in Appendix B. However, only five of these were actual positions of employment. The other three were descriptions of aspects of positions.¹⁵ One of these will be discussed in greater detail in subsequent paragraphs. The set of positions was generated in part by Inside Bureaucracy and through consultation with Michigan Department of Public Health officials and consisted of a number of positions, or descriptions of positions, in public health at the state and local level.

The directors' preference ranking of two of these position were used to measure climber and conserver ambition. I expected from Downs discussion that climbers would rank positions with greater responsibility, prestige, and income relatively high on their preference ordering and would rank positions of less responsibility and less prestige and salary lower. I also

expected that conservers would reflect a reversal of the climbers' ordering with regard to these two positions. By definition, climbers want to maximize their goals of power, prestige, and income whereas conservers want to maximize security and convenience.¹⁶ The operational definition of climber was the preference ranking given to the position of director of a large public health department. In general the salary of the director is a direct function of the size and budget of the department.¹⁷ The experience and visibility that a director of a large department in the state obtains, other things being equal, can be important in the director's mobility to other positions such as state or federal public health jobs. If Downs was correct, climbers would rank the position of director of this kind of a department higher in comparison to the other positions than would conservers.

The operational definition of conserver ambition was the preference ranking given to the position as director of a small public health department that is not changing in size. Again, by definition, conservers would be expected to have a high preference for a position which would allow them to maximize convenience and security. Although the salaries in the smaller departments are not very high, the demands need not be very high either. If the department is not changing in size this implies that there are fewer new problems to deal with, fewer new personnel to assign, and a slowly expanding budget to administer. In other words, lack of change implies convenience. So conservers would be expected to

have a high preference for this position and climbers to have a low preference for this type of position.

A third type of ambition was investigated also. I had thought that climbers would be interested in influencing policy in public health and used the preference ranking of a position which would allow the director to influence public health policy as an indicator of an aspect of climber ambition.

The preference ranking assigned to each position could range from one to eight. Some analysis is done with these measures using contingency tables, ordinal and interval level statistics. It was assumed that these preference rankings could be treated as interval scales. Since the ranks of the positions were forced into a scale of from one to eight and the director could not assign the same rank to any two positions, the ranking assigned to any position indicates the intensity of the director's preference for that position relative to the others.¹⁸ Each director's preferences are anchored within the same range. Not only do I have the director's response as to whether he prefers a convenient position to a well-paying one but I also have the degree of preference.

The two types of ambition, as measured, are not dichotomies and are to a great extent, independent of each other. That is, a director may rank both the position used to measure the degree of climber ambition and the position used to indicate degree of conserver ambition high. Or both may be ranked fairly low. If a director has a high degree of climber ambition it does not necessarily mean that

he will have a low degree of conserver ambition, although this is usually the case with the present data.

Downs argues that conservers are change avoiders whereas climbers are ready to change especially if it will benefit them. Conservers will avoid change if possible but will change positions if not to do so would damage them. But climbers generally find that change has higher pay-offs for them than do conservers. This has been discussed in Chapter Two where it was hypothesized that climbers would be more likely than conservers to report preferring some position other than the one they presently held. Climbers would also be less likely than conservers to report that they are content to remain in their present positions until retirement. Items on the questionnaire asked the respondents if they did prefer a position other than the one that they presently held. The responses were limited to Yes or No. The second question was a five point item which asked the directors to indicate how content they would be to remain in their present position until retirement. The permitted responses ranged from Very Content to Indifferent to Not At All Content. It follows that if conservers were change avoiders that they would be more likely to be content than climbers with whatever positions they presently held. They also would be less likely to put forth any effort to change or to improve their position.¹⁹ Their position may be objectively very desirable, but at this point they would be conservers. On the other hand, climbers would be more likely to report being Not Content to stay in their present position until retirement. First of all as climbers they

would have ambitions which would need more prestige, money, and power to satisfy. If they were in a smaller department they would probably have plans on moving to a more prestigious position or one which pays more. Likewise, if they are frustrated in reaching their goals, whatever they may be, climbers are more likely to report being Not Content and more likely to attempt to take some action to rectify the situation. At any rate this indicator should be related to the climber and conserver indicators and in turn related to age and the other independent variables of this hypothesis set.

The two questions tapping the willingness of the director to change positions comprise, in part, a construct validation of the ambition measures.²⁰ These questions are getting at attitudinal variables, and as such, they differ from the other measures used as indicators for variables in this hypothesis set. The hypotheses involving the two attitudinal questions are generated more for validation purposes than for theory testing.²¹ Although Downs does not define conservers as change avoiders, he does state that they will be.²² So since it has been argued that conservers and climbers will exhibit relationships to these two responses, I then test for relationships between the background variables and these attitudinal variables which are hypothesized to be a part of the conserver and climber ambition complex. Tables are presented showing the association between the prefer and contentment indicators and the other independent variables of age, private practice, advanced degree in public health and the number of years of private practice.

Hypotheses B-1 through B-4 were tested by determining the associations between each of the ambition measures and the independent variables of this set. In addition, the associations between the responses to the Prefer and Contentment measures were determined. These associations are shown in Table 3-4. Other tables further illustrate the associations in contingency table format. Tables 3-16 and 3-17 give the associations between the Prefer and Contentment responses and the ambition measures. The relationships will be discussed in the following sections.

Age and Ambition

Hypothesis B-1 was tested using each of the measures of expressed ambition. Tables were constructed to display the relationships. However, since many of the variables involved in this set were ordinal or interval level, rank order or Pearson product moment correlation coefficients are reported.²³ Tables 3-5, 3-6, and 3-7 show the relationships between age and the three ambition measures. The preference rankings for each position were dichotomized at the median to divide the groups into high and low preference. Climber ambition decreases with increasing age and conserver ambition increases with increasing age as can be seen by Tables 3-5 and 3-6. Table 3-7 shows the relationship between the position which would allow the director to influence public health policy and age. This shows that as age increases, the preference for this kind of a position decreases. I have argued that this kind of preference is related to a director's climber ambition and this table adds indirect support for that argument.

Tables 3-8 and 3-9 show the relationships between age and the Prefer and Contentment responses. As age increases the director is less likely to prefer a position other than the one he already has. The responses to the Contentment question were collapsed into a dichotomy as shown. The older directors are more likely to report being content to remain in their present position until retirement.

In general, hypothesis B-1 is supported. The correlations between the independent variables, the directors' background variables, and conserver ambition was much stronger than that between these variables and climber ambition (see Table 3-4). For example, the correlation between age and conserver ambition was $r = .38$ and that between age and climber ambition was $r = -.24$. Other researchers have found strong static ambitions developing with increasing age.²⁴ It appears that a similar phenomenon may be found here. My use of Downs' term conserver ambition is analogous to Schlesinger's term static ambition.

I had expected that part of the item concerning the director's preference for a position which would enable him to have influence on public health policy to be an indicator of ambition, with climbers being more concerned with this position than conservers. The correlation between age and the preference ranking assigned to this position was $r = -.29$. This was not particularly strong but in the expected direction. As Table 3-7 shows, it is predominately the younger directors who have a high preference for this type of position.

I have support then for hypothesis B-1. The consistency of the measures of association between the indicators of ambition and age allow me to conclude that age is related to the type of ambition, with older directors more likely to be conservers than younger directors and younger directors more likely to be climbers than older directors. However, it seems that age is more closely related to the conserver position than to the climber position.²⁵

Private Practice and Ambition

Whether or not the director had spent any time in private practice was also predicted to be related to his expressed ambition. The correlation between private practice and the director's preference for the position as director of a large department, climber ambition, was $r = -.42$ (see Table 3-4). For private practice and degree of conserver ambition $r = .15$, again in the expected direction but a much weaker correlation. For the policy position the correlation was $r = -.22$. This again was in the expected direction but weak.

Private practice shows only a weak relationship to the preference for a position other than the one held, although this relationship was also in the expected direction (see Tables 3-4 and 3-11). The relationship of the contentment item and private practice is also weak but in the expected direction (see Tables 3-4 and 3-10). Private practice shows the expected association with ambition. Although the relationships are not all as strong as with age, I conclude that I have support for the hypotheses relating private practice with ambition.

TABLE 3-4.--Correlations Between Director Characteristics and Measures of Expressed Ambition.

Director Background Variables	Preference for Large Departments (Climber ambition)	Preference for Small Departments (Conserver ambition)	Preference for Policy Position (Policy ambition)	Prefer Other Position	Content to Remain Until Retirement
Age	-.24 (N=22)	.38 (N=22)	-.29 (N=21)	-.43 ^a (N=24)	.47 (N=27)
Private Practice ^a	-.42 (N=22)	.15 (N=22)	-.22 (N=21)	.14 (N=22)	.17 (N=25)
Number of years of Private Practice	-.20 (N=15)	.73 (N=15)	-.46 (N=14)	-.40 ^a (N=15)	.58 (N=16)
Advanced degree in Public Health ^a	.004 ^b (N=22)	.40 (N=22)	-.13 (N=21)	-.04 ^b (N=22)	-.22 (N=22)

^aCorrelations are point biserial. The responses were No or Yes and were coded with a smaller value assigned to No.

^bNot in the direction predicted by the hypothesis but the correlations are so low as to indicate practically no relationship whatsoever. These were the only two correlations not in the predicted direction in this table.

TABLE 3-5.--Director's Preference for Position as Director of A Large Public Health Department by Age.

	Age		
	45 or less	26 to 55	56 or more
High	4 (44%)	1 (17%)	0 (0%)
Preference for Position			
Low	5 (56%)	5 (83%)	7 (100%)
	9 (100%)	6 (100%)	7 (100%)
	Gamma = .83	N = 22	

TABLE 3-6.--Director's Preference for Position as Director of a Small Public Health Department that is Stable in Size by Age.

	Age		
	45 or less	46 to 55	56 or more
High	1 (13%)	2 (33%)	5 (63%)
Preference for Position			
Low	7 (87%)	4 (67%)	3 (37%)
	8 (100%)	6 (100%)	8 (100%)
	Gamma = -.72	N = 22	

TABLE 3-7.--Director's Preference for a Position Which Would Allow the Director to Influence Public Health Policy by Age.

	Age		
	45 or less	26 to 55	56 or more
High	5 (63%)	1 (17%)	1 (14%)
Preference for Position			
Low	3 (37%)	5 (83%)	6 (86%)
	8 (100%)	6 (100%)	7 (100%)
	Gamma = .73	N = 21	

TABLE 3-8.--Director's Preference for Position Other Than Current Position by Age.

		Age	
		50 years or less	51 years or more
Prefer any position other than current one.	No	8 (67%)	11 (92%)
	Yes	4 (33%)	1 (8%)
		12 (100%)	12 (100%)
			N=24
Phi = 32.		Gamma = -.69	Per cent difference = 25

TABLE 3-9.--Director's Contentment to Remain in Present Position Until Retirement by Age.

		Age	
		50 years or less	51 years or more
Content to remain in present position until retirement.	Yes	4 (31%)	11 (79%)
	No or Indifferent	9 (69%)	3 (21%)
		13 (100%)	14 (100%)
			N=27
Phi = .48		Gamma = -.78	Per cent difference = 48

TABLE 3-10.--Director's Preference for a Position Other than Current Position by Private Practice.

	Private Practice	
	No	Yes
No	6 (86%)	11 (75%)
Prefer other position		
Yes	1 (14%)	4 (25%)
	7 (100%)	15 (100%)
Phi = .14	Gamma = .37	N = 22.

TABLE 3-11.--Director's Degree of Contentment to Remain in Current Position Until Retirement by Private Practice.

	Private Practice	
	No	Yes
Yes	4 (44%)	9 (56%)
Content to remain until retirement		
No or Indifferent	5 (56%)	7 (44%)
	9 (100%)	16 (100%)
Phi = .14	Gamma = .27	N = 25

Number of years of Private Practice and Ambition

The correlations of this variable with the indicators of ambition are very high with one exception. Since I included a variable in the analysis on private practice, the number of years of private practice includes only those directors who had been in private practice at all. So the total number of directors in this set is somewhat smaller since not all of the physicians had had any private practice. This variable was measured on an interval scale so only the Pearson r 's are reported to show the strength of relationship. All of the correlations are high except for climber ambition although it is in the expected direction as are the others (see Table 3-4). However, as the length of private practice increased, the preference for a small, stable department increased. Only a small tenure in private practice was not enough, apparently, to give rise to climber ambition. Hypothesis B-3 is supported.

The Prefer and Contentment responses show the expected correlations with the number of years of private practice. The directors with longer tenure in private practice were more likely to report not preferring a position other than the one currently held and more likely to be content to remain in that position until retirement.

Advanced Degree in Public Health and Ambition

Although there were several possible responses to a question inquiring about the director's training in public health, the categories were coded as a dichotomy; those that did not have an

advanced degree in public health and those that had either a Master's or a Doctorate in Public Health (see question 6, Part II, Appendix B). The correlations show mixed results as some of the relationships are markedly stronger than others (see Table 3-4). The correlation with the degree of conserver ambition is moderately strong while there is virtually no correlation at all between public health degree and climber ambition. What little there is appears to be in the wrong direction. There is essentially no correlation between advanced degree and preference for other position either, although those with an advanced degree in public health were less likely to remain in their current position until retirement. About all I can conclude is that advanced degree in public health is associated with conserver ambition but not with climber ambition.

Tables 3-12 through 3-15 show the relationships in tabular form. Even in this form there is essentially no relationship appearing between climber ambition--as measured by preference for position as the director of a large public health department--and advanced degree in public health.

Directors Willingness to Change Positions and Ambition

The associations between the two indicators of the directors' willingness to change jobs and the background variables of age, private practice, number of years of private practice, and advanced degree in public health were all in the direction expected. These associations indicate that those directors with climber attributes were more likely to prefer other positions and less willing to stay

TABLE 3-12.--Director's Preference for a Position as the Director of a Small Public Health Department that is not Changing in Size by Advanced Degree in Public Health.

		Preference for Position			
		High	Medium	Low	
Advanced degree in Public Health	No	4 (33%)	5 (42%)	3 (25%)	12 (100%)
	Yes	1 (10%)	3 (30%)	6 (60%)	10 (100%)
		Gamma = .59		N = 22.	

TABLE 3-13.--Director's Preference for a Position Which Would Allow the Director to Influence Public Health Policy by Advanced Degree in Public Health.

		Preference for Position			
		High	Medium	Low	
Advanced degree in Public Health	No	3 (27%)	4 (36%)	4 (36%)	11 (100%)
	Yes	4 (46%)	3 (30%)	3 (30%)	10 (100%)
		Gamma = -.37		N = 21.	

TABLE 3-14.--Director's Preference for a Position Other than Current Position by Advanced Degree in Public Health.

	Advanced Degree in Public Health	
	No	Yes
No	11 (79%)	6 (75%)
Prefer other position		
Yes	3 (21%)	2 (25%)
	14 (100%)	8 (100%)
Gamma = .10	N = 22	Per cent difference = 4

TABLE 3-15.--Director's Contentment to Stay in Current Position Until Retirement by Advanced Degree in Public Health.

	Advanced Degree in Public Health	
	No	Yes
Yes	5 (36%)	7 (64%)
Content to stay in position until retirement		
No or Indifferent	9 (64%)	4 (36%)
	14 (100%)	11 (100%)
Gamma = -.55	N = 25	Per cent difference = -28

in their present position until retirement. But it must be determined if these two measures are in turn associated with the ambition measures themselves.

Tables 3-16 and 3-17 show the associations between these two sets of measures. With the exception of the association between climber ambition and the preference for other positions, the associations are in the predicted direction with climbers indicating more willingness to change jobs than conservers. However, the association between climber ambition and preference for other positions shows that climbers are less likely to prefer a position other than their current one than are conservers. This weakens the support for construct validity. However, the degree of climber ambition is negatively correlated with the director's contentment to remain in his present position until retirement. The degree of conserver ambition is related to these two measures in the expected direction (see Tables 3-16 and 3-17).

Only four respondents reported that they would prefer another position to their current one. However, only 20 reported that they would be content to stay in their present position until retirement. The remaining 10 were indifferent or not content. Those directors with a lower preference for the climber position were more likely to prefer a different position. Since only four of the directors expressed a preference for a different position, this relationship may not be very important.

So we find that the two attitudinal measures are related fairly strongly in the expected direction to the indicator of

TABLE 3-16.--Associations Between Director's Ambition and Preference for Other Positions and Contentment with Present Position.

	Climber Ambition	Conservator Ambition	Policy Ambition
Prefer position other than present	.10	.32	-.09
Contentment to stay in present position until retirement.	-.08	.29	-.37
(Spearman rank order correlation coefficients.)			N=31

TABLE 3-17.--Director's Preference for a Position Other Than the One Currently Held by Preference for Small Public Health Department that is Stable in Size.

	Preference for a Small Department	
	High (1-5)	Low (6-8)
No	18 (95%)	8 (73%)
Prefer other position	Yule's Q = .74	
Yes	1 (5%)	3 (27%)
	19 (100%)	11 (100%)

conservator ambition. They are only weakly related to the indicator of climber ambition and in the case of preference for a position other than the present one, the relationship is in the opposite direction. These attitudinal measures are related in the expected direction to the director background variables with one exception and that association is so weak as to indicate no relationship (see Table 3-4).

It seems that these two attitudinal dimensions may not be an integral part of climber ambition. Neither Downs nor this study defines climbers as being change oriented. Downs, however, does claim that conservators are change avoiders and this exercise supports that contention.²⁶ Although the attitudinal measures were expected to be related to the measure of climber ambition, climbers were not defined as changers. In fact, if they have a high preference for the position of director of a large department--the operational definition of climber--and are already in that position, then they would be expected to be less willing to change and more willing to remain in that position until retirement. Perhaps a better way of relating attitudes toward change to climber ambition would be to note the number and direction of job changes that a director has made in his past career.

The rankings of a position to allow the director to influence policy were related to both of these items. It appears that those directors with a greater preference for this type of position are more willing to change positions and less content to stay in current positions than those with a lower preference for this position.

Multivariate Analysis of Director Background Variables

Multiple regression analysis was also used to analyze the data for this set of variables. Each of the indicators of ambition was regressed on the four independent variables age, private practice, number of years of private practice and advanced degree in public health. Nominal variables were converted to dummy variables.²⁷ The Prefer and Contentment variables were dropped from the analysis as these were neither background variables or indicators of ambition. A step-wise multiple regression routine was used. All of the four independent variables were entered in each equation to determine how much of the variance in each of the ambition indicators the set of four variables explained.²⁸ Table 3-18 gives the regression and multiple correlation coefficients for the indicator of climber ambition. The four independent variables account for 45% of the variance in climber ambition.

These four variables account for 82% of the variance in the indicator of conserver ambition (see Table 3-19). This is considerably more than the amount of variance accounted for in climber ambition by these same variables. These results reinforce the argument that there are at least two types of ambition.²⁹ Factors other than these four variables are responsible for more of the variance in preference for the more prestigious but demanding position than of the variance in preference for a less prestigious but safe position.

Table 3-20 illustrates the correlations for the preference for a position which would allow the director to influence policy.

TABLE 3-18.--Multiple Regression with Preference for Position as Director of a Large Public Health Department as Dependent Variable.

Cumulative Independent Variables	R^2	b / S.E.	beta
Private practice	.18	-4.36/1.75	-.92
Number of years of private practice	.22	-.33/.16	-1.39
Advanced degree in public health	.29	4.46/2.32	.98
Age	.45	-.21/.13	-.94

F = 1.83; N = 27

TABLE 3-19.--Multiple Regression with Preference for Position as Director of a Small Public Health Department that is Stable in Size as Dependent Variable.

Cumulative Independent Variables	R^2	b / S.E.	beta
Number of years of private practice	.54	.43/.08	2.06
Age	.57	.24/.07	1.20
Private practice	.63	2.98/.89	.71
Advanced degree in public health	.82	-3.64/1.18	-.90

F = 10.17; N = 27

TABLE 3-20.--Multiple Regression with Preference for Position Allowing the Director to Influence Policy as the Dependent Variable.

Cumulative Independent Variables	R^2	b / S.E.	beta
Number of years of private practice	.21	-.34/.11	-1.87
Private practice	.26	-2.93/1.2	-.81
Advanced degree in public health	.31	3.78/1.6	1.08
Age	.55	-.20/.09	-1.17

F = 2.79; N = 27

The independent variables account for 55% of the variance in preference for this position.

Summary

The analysis in this chapter tests hypotheses in sets A and B and includes hypotheses generated for the purpose of construct validation. The hypotheses relating organizational variables to innovation are supported. The multi-collinearity among the independent departmental variables was extremely high; so high that many of them are empirically equivalent. It was concluded that, with the exception of population, the departmental variables were mechanisms which the departments could use to be innovative. Each of these, however, was thought to be dependent on the availability of resources.

Population is not dependent upon resources but the availability of resources was strongly correlated with population. Additional analysis indicated that population led to more resources which was correlated with innovation. Population had some separate effect on innovation but if it were not accompanied by comparable resources the effect of a larger population on innovation was negative.

Multiple regression analysis of the departmental variables accounted for 49% and 76% of the variance in innovation for primary and secondary innovation, respectively. It also indicated that one of the departmental variables accounted for the majority of the variance but not all of it. Additional variables were brought into the equation by a step-wise regression routine but did not add much

to the variance explained. More of the variance in secondary innovation than in primary innovation was explained by the departmental variables.

Changes in size, resources, and population from 1968 to 1971 were correlated with innovation. These variables were selected as they seemed to be prerequisites to the other departmental variables. Innovation was correlated with changes in each of these variables but not strongly. However, the multiple correlation of these changes with innovation was high: $R = .75$ for primary innovation and $R = .37$ for secondary innovation. The degree of multicollinearity among the change variables was much lower than among the original variables.

The directors' ranking of their preferences for three positions in public health were used as measures of ambition and hypotheses relating these to background characteristics of the directors were tested. Two types of ambition were posited: climber and conserver. A third position was thought to measure an aspect of climber ambition. Director's age, private practice experience, length of private practice, and public health training were found to be related to the ambition measures. However, public health training was not related to climber ambition. The variable most strongly related to conserver ambition was the length of the director's tenure in private practice. This was negatively correlated with climber ambition and positively correlated with conserver ambition. The third measure of ambition, termed policy ambition, showed correlations with these background characteristics similar to those of climber ambition.

Two measures of the directors' willingness to change jobs were included in hypotheses with background variables and ambition. Generally the results showed that those with backgrounds which would indicate that they would tend to be climbers were more willing to change positions than those with conserver backgrounds. Conserver ambition was related to these measures in the predicted direction. Strong conserver ambition was associated with less willingness to change. However, strong climber ambition was associated with more willingness to change on only one of the measures.

Chapter III--Footnotes

¹Total expenditure has also been used as an indicator of resources. See L. B. Mohr, "Determinants of Innovation in Organizations," American Political Science Review, 63 (1969), pp. 111-126.

²A subsequent analysis showed that a curvilinear relationship was necessary to fit the association between resources 1971 and the adoption measure of innovation, see pages

³The problem arises as how to assess the importance and significance of these results. Since I do not have a random sample, significance tests do not have the usual meaning. However, some authors in this situation report results that would have been significant had the group in question been a random sample. (See Larry Mohr, American Political Science Review, p. 115.) Russett discusses this problem and suggests the use of significance tests to indicate the departure of the results from randomness. S. M. Lipset, Martin Trow, and James Coleman, Union Democracy (The Free Press, 1956), Appendix I, pp. 470-485, discusses this problem. They conclude that the results of an entire pattern of hypotheses rather than the significance of any single one hypothesis is the important criteria for judging the results of a study.

Since my N is relatively small, significant results would not seem to be merely due to large numbers. However, any correlation, nominal, ordinal, or interval, in the expected direction will be considered only weak support for the hypothesis unless it is at least .20. (See Connolly and Sluckin, An Introduction to Statistics for the Social Sciences (London: The MacMillan Press, Ltd., 1971), pp. 151-154. I will also argue that results of the hypotheses taken as a set, even if they are weak, are more important to the judgment of the results of the research and the theory than the results of any hypothesis taken singly.

⁴Richard Allen Smith, "Community Structure and Innovation: A Study of the Effects of Social Structure on Program Adoption and Implementation" (unpublished Ph.D. dissertation, Cornell, Ithaca, New York, April 1973), pp. 182-183; Robert A. Gordon, "Issues in Multiple Regression," American Journal of Sociology (1968), pp. 592-604.

⁵Ibid.

⁶These correlations were as follows: Total county revenue for 1968 with primary and secondary innovation, $r = .34$ and $r = .27$, respectively. Total county revenue for 1971 with innovation, $r = .29$ and $r = .27$.

⁷See Gordon, op. cit., and Hubert Blalock, "Correlated Independent Variables: The Problem of Multicollinearity," Social Forces, 42 (December, 1963), pp. 233-237.

⁸Mohr concluded that although community size was a very important determinant of innovation, it was so because of the availability of resources which accompanied larger size communities. L. Mohr, op. cit., p. 120.

⁹Hubert Blalock, Jr., Causal Inferences in Non-Experimental Research (Chapel Hill: The University of North Carolina Press, 1964), pp. 83-91; L. Mohr, op. cit., p. 120.

¹⁰Norman H. Nie, Dale Bent, and C. Hadlai Hull, Statistical Package for the Social Sciences (New York: McGraw-Hill Book Company, 1970), pp. 196-207.

¹¹Due to this high multicollinearity the step-wise regression routine may evaluate two or more variables that are strongly related to the dependent variable quite differently. Variables are brought into the equation on the basis of their unique contribution to the variance in the dependent variable.

¹²William Niskanen makes an explicit assumption that bureaucrats attempt to maximize the size of their agencies' budgets subject to certain constraints. William A. Niskanen, Bureaucracy and Representative Government (Chicago: Aldine-Atherton, 1971).

¹³The analysis on page 89 partially supports this.

¹⁴See Appendix B.

¹⁵The eight positions that the director were asked to rank order are: (a) Director of a large public health department, (b) Director of a small, but growing, public health department, (c) Director of a small public health department that is relatively stable in size, (d) Bureau chief in a state department of public health, (e) Program chief in a state department of public health, (f) A position which would allow you to exercise the most influence on the policy direction of public health, (g) Director of a department that has instituted a number of progressive programs, (h) Director of a department that would allow you to institute a number of progressive programs (see question 17, page 11, on the questionnaire in Appendix B).

The order here does not imply any objective desirability of the positions. This is merely the order in which they appeared in the questionnaire. Items (a) through (e) describe actual positions. The remaining three, (f), (g), and (h) are not positions as such but describe aspects of public health positions.

¹⁶Anthony Downs, Inside Bureaucracy (Boston: Little, Brown, and Company, 1967), pp. 88-102.

¹⁷This is the usual situation in organizations. My conclusion here is based on discussions with public health officials and information from the local public health departments budgets and the Local Government Budget Document of the Michigan Department of Treasury.

¹⁸Edward Tufte, "Improving Data Analysis in Political Science," World Politics, 21 (1968-69), pp. 641-654.

¹⁹Downs, op. cit., pp. 88-102.

²⁰Validation techniques typically relate a test or indicator that is assumed to measure some concept to one or more criterion variables that theoretically should be related to the test. Then the test's validity is assessed in terms of how well the test and the criterion variables are related. See C. Richard Hofstetter, "The Amateur Politician: A Problem in Construct Validation," Midwest Journal of Political Science, 15 (February, 1971), pp. 31-56. Hofstetter also notes that "Trait construct validity . . . requires the postulation of a series of relationships between the concept the measure of which is to be validated and other variables. . . . Individual criteria are hypothesized to relate to a measure of the concept to be validated and measures for each of the criterion variables then inter-correlated in standard fashion," p. 34.

²¹Harold P. Bechtoldt, "Construct Validity: A Critique," American Psychologist, 14 (October, 1959), pp. 619-629.

²²Downs, op. cit., p. 97.

²³Point biserial correlations are reported when one of the variables is dichotomous. Linton C. Freeman, Elementary Applied Statistics (New York: John Wiley and Sons, Inc., 1965).

²⁴Kenneth Prewitt, The Recruitment of Political Leaders: A Study of Citizen Politicians (New York: Bobbs-Merrill Company, 1970), pp. 186-188; Kenneth Prewitt and William Nowlin, "Political Ambitions and the Behavior of Incumbent Politicians," The Western Political Quarterly, 22 (June, 1969); Paul L. Hain, "American State Legislator's Ambition and Careers: The Effects of Age and District Characteristics" (unpublished Ph.D. dissertation, Michigan State University, East Lansing, Michigan, 1971).

²⁵The gamma statistic is higher for the former position than the latter. However, the cutting points for age and preference probably effect this somewhat. Also the zero entry in the cell in the table for climber ambition tends to inflate gamma. See William Buchanan, Understanding Political Variables (Second Edition; New York: Charles Scribner's Sons, 1974), pp.

²⁶Downs, op. cit., p. 97.

²⁷Daniel B. Suits, "The Use of Dummy Variables in Regression Equations," Journal of the American Statistical Association, 52 (1954), pp. 548-551; Jacob Cohen, "Multiple Regression As a General Data Analytic Scheme," Psychological Bulletin, LXX (1968), pp. 426-443.

²⁸Although age and number of years of private practice are both strongly related to ambition, the collinearity between these causes the step-wise regression routine to evaluate one as being relatively important and the other as relatively unimportant.

²⁹Gordon S. Black, "A Theory of Professionalization in Politics," American Political Science Review (September, 1970), pp. 865-878, discusses this in his analysis of positional and progressive commitment ambition.

CHAPTER IV

HYPOTHESIS TESTING: DIRECTOR'S AMBITION AND INNOVATION AND THE DEVELOPMENT OF MULTIVARIATE MODELS

The next concern is the correlation of the characteristics of the individuals who are the directors of the health departments with the innovation of the department. As discussed in Chapter I, there are characteristics of individuals which have been found by a number of different researchers to correlate with innovation. The question here is whether or not these characteristics influence the individual to have an effect on the innovation of a department. In other words, to what extent do the characteristics of the director account for variation in innovation of public health departments? Previous research suggests that they do have a substantial effect.

In this chapter I deal with the director and departmental variables jointly. If we are to connect individual action to organizational output, an attempt needs to be made to use the assumptions and hypotheses of the theories discussed earlier to relate the characteristics of individuals to organizational characteristics. From Downs, we are led to expect that directors will differ as to the type of department in which they are found according to their type of ambition. These directors may have sought out the departments because of their ambitions or the directors may have developed their ambition because of the department they are in.

The present study will only partly distinguish between these two situations. However, we can draw some logical conclusions after testing the hypotheses relating directors to departments.

Health Department Director's Background and Ambition and Departmental Innovation

I will in the next section relate the directors' expressed ambitions to departmental characteristics. However, the correlation of the background factors of the directors with innovation will be reported also. The main purpose, though, is to assess the effect of the director's ambition on the innovation of the department. The expressed ambitions of the directors will include their expressed preferences for the three public health position described earlier: (a) a position as the director of a large public health department (b) a position as director of a small public health department that is stable in size, and (c) a position which would allow the respondent to have the most influence public health policy. The responses to (a) and (b) are the operational definitions of degree of climber and conserver ambitions, respectively. Position (c) may be related to the director's climber ambition and be an analog to Downs' advocate.¹ It is included here, however, to measure the director's interest in influencing policy: Downs may have confused ambitions and strategies in his description of the different types of goals and this is a case of where this has happened. That is, the bureaucrat may be a zealot or an advocate in order to further his climber ambitions. However, it may also be the case that those directors strongly favoring this type of position still have not

formulated any precise goals. If, as many writers suggest, goals and aspirations rise with success, we may very well find these directors becoming climbers. Gordon Black discusses the professionalization of those committed to a political career and found those with progressive ambitions to be more professionally oriented.² I expect a similar finding. I also predict that those directors who have a high preference for influencing policy will also try to be innovative. As we saw in Chapter III, many of the background variables correlated similarly with climber ambition and with this indicator of the director's interest in influencing public health policy.

The first hypothesis to be tested in this chapter relates the background variables of the director to the innovation of the department.

Hypothesis C-1: Directors with experience in private practice and directors without advanced degrees in public health will tend to be associated with less innovative departments than will those directors without experience in private practice and those directors with advanced degrees in public health.

The age of the director and the number of years of private practice experience of the director will be inversely correlated with the innovation of the department.

The age of individuals has been found to be related to the innovativeness of the individual. Studies of organizational innovation have supported the argument that the age of the director or dominant manager of an organization is an important factor in the innovation of the organization.³ In the previous public health study discussed earlier, Mohr verified the fact that the public health department

director was one of the most important factors involved in the department's innovation. He and Mytinger found correlations between age and departmental innovation but they were not strong. Rogers and others found age to be related to innovation in individuals. But one must inquire further as to why age is related to innovation, either positively or negatively and why it is not consistently or strongly related. And what explains Mohr's findings that those older health officers in larger departments who have had a strong career in public health are associated with greater organizational innovation.⁴ The intervening variables of ambition, as classified according to the climber and conserver typology, can help explain and clarify this.

Not only age but a number of other factors are likely to be related to the individual's personal and professional goals. His training, former career, and professional commitment may all influence his goals, his ability to obtain and utilize information, to persuade, to lead, and ultimately upon the degree to which he is responsible for innovation within the department which he directs. Part of hypothesis C-1 is that age is negatively correlated with innovation. However, other factors involved here will probably result in a rather weak correlation. If factors such as private practice and public health training were controlled, age would likely to be strongly related to innovation. The major purpose of the remaining analysis is to determine if ambition of the director is important for innovation.

The hypothesis that age is related to the career goals of bureaucrats has already been tested. From ambition theory we obtain the axiom that goals are relevant for behavior.⁵ I have also tested hypotheses linking other characteristics of individuals to some expression of their ambitions and will now discuss and test hypotheses which link these expressions with characteristics of departments, including innovation. The training of the director is another factor that would be expected to have an influence on the director's willingness and ability to innovate. We have already found that the director's training is related to his expressed ambition. Working from the theory and research outlined earlier I would expect that those physicians with a Master's degree or Doctorate in Public Health would be more concerned with moving up in the profession than with simply maintaining or conserving a present position. The data supported the hypothesis that the holding of an advanced degree in public health was related to the degree of conserver ambition. It was not, however, related to the director's degree of climber ambition. The director with an advanced degree is likely to be more innovative, though, as he will have closer access to information about new programs in public health and closer ties to professionals in schools of public health. If he has invested the time and effort into getting an advanced degree, his orientation will be more toward this profession than will a director who has not invested in the degree. This also suggests, in turn that ambition, at least conserver ambition, will be related to innovation.

The former career of the director should also be related to his ability and willingness to innovate. Those physicians having spent a great deal of time in private practice would not be as likely to have the interest, experience, knowledge, or perhaps the inclination to attempt to implement many of the newer goals of public health. So we would expect those with more private practice experience to be less innovative. Their professional socialization would not be such as to support innovation in public health either.⁶ In fact, those directors coming from private practice would probably resist the adoption of many non-traditional programs in public health.

But also those directors with more training in public health would have a greater commitment to this profession and would be more likely to be climbers. And this is what I found in testing the hypothesis that there was a relationship between the private practice experience of the director and his ambition. The relationships between private practice and innovation expressed in hypothesis C-1 are therefore predicted.

The desire of the director to be able to influence public health policy is expected to be related to the director's willingness to innovate. A director that wanted to be in a position to influence policy would be expected to have more of a positive effect on innovation than someone who did not care about affecting policy. So I expect to find that the characteristics related positively to climber ambition to also be related positively to innovation and those characteristics related negatively to conserver ambition to

be negatively related to innovation. The following hypotheses, also discussed in Chapter II, are re-stated:

Hypothesis C-2: There will be a positive correlation between the degree of climber ambition of the director and the resources of the department and a negative correlation between the degree of conserver ambition and resources.

Hypothesis C-3: The degree of climber ambition of the director will be positively correlated with the innovation of the department and the degree of conserver ambition will be negatively correlated with innovation.

Following the theory outlined in Chapter I, I hypothesize the type of department in which the different types of directors will be found. Directors of larger departments will tend to be climbers rather than conservers and directors of smaller departments will tend to be conservers rather than climbers. So we should find a correlation between ambition of the director and innovation of the department even though we do not claim that the directors cause innovation. The correlation should be found if directors of larger departments tend to be climbers and larger departments are more innovative.

Downs argues that bureaucrats will be attracted to those organizations or bureaus in which they can most likely accomplish their career objectives. If a climber is not able to accomplish his goals in his present situation he will more likely consider leaving than will the conserver or he will change his goals. That is, he will lower his aspirations or higher aspirations will fail to develop if the director or other bureaucrat is not able to

leave a situation in which the realization of climber goals is frustrated.⁷

If climbers do attempt to maximize power, income, and prestige, then they would be expected to seek out the larger departments. They may not yet be in these departments, though. But I would expect that some of these individuals desirous of a directorship of a large department would have attained their goal. Also we would expect some to find that they prefer the large department after being there. Literature in psychology and decision-making shows that aspirations tend to rise with success.⁸ Schlesinger points out that structural conditions, that is, the opportunities available in a situation give rise to ambitions.⁹

The correlation is not likely to be strong, though, as some climbers may be in smaller departments. However, the dynamics of the development of ambitions will play a part here. If climber ambitions are fairly well established by training, age, and past employment experience, I would expect to find a good number of climbers in smaller departments. These directors would be on their way up, so to speak. On the other hand, if climber aspirations and ambitions only develop with experience and success, including experience in larger departments, a stronger association should be found between climber ambition and the resources of the department. A four variable path model analyzed in the last section of this chapter will attempt to separate the development of ambition due to background from the effect of departmental variables.

On the other hand we would not expect conservers to be in the larger departments. They are more likely to be found in smaller departments. Since there is some indication that conserver ambition is fairly strong among those directors with a particular set of characteristics, I would expect a fairly strong negative correlation between conserver ambition and resources of the department (see Table 3-4, Chapter III).

If we find climbers in departments which are innovative, we can then see how much this helps to account for the variance in innovation and can continue the argument that climbers do perhaps use innovation as a strategy to advance their interests. Climber ambition may affect the innovation of the department either independently or in some combination with the resources of the department. The joint effects of ambition and resources will be explored in a later section of this chapter.

Departments, Data, and Variables

For the analysis in this section which combined the director data with data on departmental variables, some of the missing data for the directors was replaced with the arithmetic means of the variables or estimated by use of multiple regression equations. In all, missing data was replaced or estimated for eight of 30 directors. If complete data for a director was missing, regression equations, of course, could not be used. Some of the directors, however, had failed to answer one or more of the questions and these missing data were estimated on the basis of other information about them.

The data for four variables was estimated. The variables for which data was estimated were the responses to the preference rankings of the three positions and age. Age was replaced by the arithmetic mean of that variable. If information was missing for several of the variables, missing values on the preference ranking variables were also replaced by the arithmetic mean.

It was necessary to do this because missing data would have greatly reduced the sample size in terms of both the departments and directors. I did not estimate missing data for the analysis of the directors alone because it was necessary to establish the existence of the relationships between director characteristics on the basis of the original data collected. However, once these relationships were established, I felt more comfortable estimating the data for the remaining directors. Some of the analysis with the directors and departments can be checked with the previous analysis to note if any differences obtain between the two analyses. The use of estimated data here should not affect the magnitude of the relationships very much. Any bias should be conservative, that is, the relationships would be weakened rather than strengthened.¹⁰

Adoption as Dependent Variable

In order to be able to reasonably attribute an innovation to the director who filled out the questionnaire, only the adoption measure of innovation is used in this section. All of the programs in this index were very new and the index is based on the adoption of the program only, not on the times of adoption. Also since the

planning for any adoption probably took place prior to 1972, those departments whose directors began their present tenure after December 30, 1971 were removed from the analysis. There were three departments removed for this reason.

Three of the directors were directors of two departments. In order to include the departmental data for these departments but to avoid including the director data twice for each of the directors, the data for these departments was given a weight of one-half in the statistical routines.¹¹ This creates the potential for bias but some correlations computed without weighting procedure indicated only very slight differences in the results. So thirty-three departments remain in this section of the analysis but six of them are given only one-half the weight of the remaining departments. This left a reported N of 30 for the statistical routines.

Although I argue that climbers will be found in innovative departments, even though they may not be responsible for the innovation, I have also argued that climbers do try to innovate. In order to make an inference concerning the effect of ambition on innovation, it was necessary to be able to reasonably assume that the director who returned the questionnaire was at least partly responsible for the innovation of the department.

Departmental Factors

Since the purpose of this section of analysis was to assess the joint effects of departmental variables and ambition on innovation, a single or composite measure of departmental variables was

sought. All of the departmental variables were highly correlated with each other and some of them so high that empirically they could be said to be measuring the same thing. So there did not seem to much benefit in constructing an index out of the six departmental variables. I have argued that resources was perhaps the single most important variable of this set for innovation. That is, resources made it possible for the departments to innovate through expansion of the other factors, except population.¹² Mohr found resources to be the most important.¹³ Since I used resources for 1971 as a measure earlier I decided to use it as an indicator of the availability of departmental resources or as a surrogate measure of the entire set of departmental independent variables. Since I was using an innovation measure based on recent adoptions, I reasoned that I should also choose a resource measure as close to adoption time as possible. Theoretically it was most reasonable to use resources for 1971.

The composite measure was done to facilitate analysis in the causal path analysis. Inasmuch as all of the variables were highly correlated with each other, joint consideration of all of the departmental factors with ambition was not thought to be very advantageous for the purpose of this analysis.¹⁴ A factor analysis was done and the six departmental variables loaded highly on one factor. But of these variables, resources had the highest loading.¹⁵ Theoretically and empirically, the best indicator of the complex of departmental variables responsible for innovation seemed to be resources.

The majority of correlations computed were rank order--Spearman's rho--in addition to Pearson's r . Generally rho is a good estimate of Pearson's r when the relationship between two variables is not curvilinear.¹⁶ In most cases in this analysis, Spearman's rho and Pearson's r were remarkably similar, indicating essentially linear relationships. However, the difference between rho and r for the relationship between adoption and resources for 1971 was large, indicating that this relationship was curvilinear. A scattergram of the relationship indicated that a curvilinear relationship was necessary to fit the association between adoption and resources 1971.¹⁷ A transformation of this resource variable was calculated and this transformed variable used as the indicator of departmental resources. The transformed variable was equal to the logarithm to the base 10 of resources 1971.¹⁸

Tests of Ambition Hypotheses

Table 4-1 gives the correlations between director background variables and the adoption measure of innovation. Age is very weakly correlated with innovation but in the expected direction. Older directors are only slightly more associated with less innovative departments. However, the remaining director characteristics are moderately correlated with the innovation of the departments and in the predicted direction. The director variables correlated with ambition are also correlated with innovation except for age which has only a slight correlation with adoption.

Table 4-2 shows the correlations between the resources measure and adoption and the ambition measures. Both types of ambition are

correlated with resources in the predicted direction. The stronger the climber tendencies and the weaker the conserver tendencies, the more the director is likely to be associated with departments with less resources. The policy ambition measure is only slightly associated with resources. Tables 4-4 and 4-5 also display the association between resources and ambition.

Table 4-3 shows the correlations between director ambition and innovation. These also support the hypothesis. Climber ambition is positively correlated with innovation although the correlation is only moderate. Policy ambition shows the same correlation to innovation as does climber ambition. Conserver ambition shows the strongest correlation with departmental innovation. Degree of conserver ambition is negatively correlated with innovation in this set of departments.

It appears that a strong preference for conserver positions emerges as age increases. But at younger ages, the preference for higher positions, while greater than at older ages, is not as strong as the preference for conserver positions is among the older directors. Hain found a strong static ambition emerging with increasing age among the state legislators he analyzed. It could be that those with climber ambitions set their sights on some mid-level goal and not at the top of the job hierarchy. This may be due to a type of contingency planning in which the younger public health director waits to see what happens in his career before deciding on a goal. It also suggests support for the finding that a person's aspirations rise with success and that one's ambitions are shaped by present

TABLE 4-1.--Correlations Between Director Characteristics and Adoption.

	Age	Private Practice	Number of Years of Private Practice	Advanced Degree in Public Health
Adoption	-.06 (N=30)	-.30 (N=25)	-.42 (N=17)	.53 (N=25)

TABLE 4-2.--Correlations Between Adoption and Ambition and Departmental Resources.

	Adoption	Climber Ambition	Conservor Ambition	Policy Ambition
Resources ^a (log)	.39	.34	-.38	.06

^aThis is a transformation of the resource measure for 1971. The transformation is resources = log 10 (resources 1971).

TABLE 4-3.--Correlations Between Director Ambition and Adoption.

	Climber Ambition	Conservor Ambition	Policy Ambition
Adoption	.26	-.52	.26

Correlations are Pearson r's.

TABLE 4-4.--Director's Preference for Position as Director of A Large Department by Resources.

		Director's Preference			
		High	Medium	Low	
Resources 1971	Low	1 (11%)	6 (40%)	3 (38%)	
	Medium	2 (22%)	6 (40%)	3 (38%)	
	High	6 (67%)	3 (20%)	2 (25%)	
		9 (100%)	15 (100%)	8 (100%)	N = 31
					Gamma = -.29

TABLE 4-5.--Director's Preference for Position as Director of a Small Department that is Stable in Size by Resources.

		Director's Preference			
		High	Medium	Low	
Resources 1971	Low	3 (33%)	6 (38%)	1 (14%)	
	Medium	4 (45%)	5 (31%)	2 (29%)	
	High	2 (22%)	5 (31%)	4 (57%)	
		9 (100%)	16 (100%)	7 (100%)	N = 32
					Gamma = .30

Resources Low = 83,300 to 176,400
 Medium = 193,400 to 413,700
 High = 483,400 to 11,747,100
 in dollars.

Preference High = 1-4
 Medium = 5-6
 Low = 7-8

The gamma's are in the predicted direction. The way the tables are set up causes gamma for Table 4-2-a to be negative and gamma for Table 4-2-b to be positive. As resources increase climber ambition increases and conserver ambition decreases.

and past successes.¹⁹ As a health officer, or other bureaucrat, gains experience and success in a position, he is able to see what is reasonable for him to obtain from that position. He can judge what others have done in similar positions and can use the resources at hand to accomplish things that he had not previously thought likely.

Multivariate Models of Innovation

Up to this point I have investigated the relationships between departmental factors and innovation, individual factors and innovation, and individual and departmental factors and have not dealt with relationships among the three sets of variables. This will be covered in the next section of the analysis.

The analysis has, of course, been leading up to test the hypothesis that innovation is a function of departmental characteristics and director characteristics. However, in terms of the director, I will initially consider the ambition measures rather than the background variables. A final piece of analysis will include both of these. The general hypothesis to be tested in this section of analysis is:

Hypothesis D-1: The innovation of the department is a function of the resources of the department and the ambition of the director.

The prime purpose of this section is to assess the relative influence of each set of factors on innovation and to determine the joint effects of resources and ambition on innovation.

The first task is to look at the additive effects of departmental variables and ambition. Since the ambition measures themselves

have been found to correlate with the departmental variables, partial correlation analysis will be done to determine if the relationships between innovation and departmental variables or that between ambition and innovation, is spurious. That is, does either set of variables have an effect on innovation that is not attributable to the other. Is climber ambition only found to correlate with innovation because climber ambition is associated with greater size and resources which in turn are associated with more innovation?

According to the theory outlined in Chapter I, the motivation of the director to innovate is important for innovation, as are the resource characteristics of the department. The ease with which the director can obtain information will determine how innovative he is. But it may also determine how motivated he is to be innovative. The director, in a sense, calculates the chances of obtaining some position based on his present personal resources. If he evaluates them as fairly low he will not be very motivated. The investment that the director has in a public health career will also determine how motivated he is to receive a return on a public health career. In other words this will help determine the director's ambition and his motivation to innovate.

One aspect of this is the interaction between the ambition of the director and the resources of the department. A director with a lot of ambition cannot do very much if the level of resources is very low. As the level of resources increases, the director's ambition will have a greater effect on innovation. However, this

will probably reach both a lower and an upper threshold. With a large amount of resources, it will be easy to innovate, so that the difference in ambition will not be as important as it would be at a lower level of resources. The results show that departments with more resources are more innovative. I will need to separate the effects of ambition from this but am fairly confident that the departments with more resources will be more innovative regardless of the ambition of the director. If the department has a very low level of resources, though, even a highly motivated director will not be able to innovate. So with a very low level of resources director ambition may make little difference to innovation, but after a lower threshold is surpassed and before an upper one is reached, the director's ambition will have a large effect on innovation.

I will look at the three separate measures of ambition and but one measure of departmental resources, the transformation of resources 1971.²⁰ Some causal modelling will be done to trace out the sequences of variables to fill out the model and to suggest a new theory or a revision if necessary.

As we saw, the ambition of the director is related to the organizational variables which in turn are related to ambition. The next step is to determine whether it is the organizational variables in themselves that determine innovation or if these variables are determinants of innovation because of the type of director that they are able to attract. This is the line of analysis that will be pursued in the following section.

A partial solution to the above question can be obtained by the following procedures. First, if it is primarily the organizational variables and not the director variables that determine innovation, controlling for director ambition should not have much of an effect on the partial correlation between organizational factors and innovation. If, however, organizational factors determine innovation only because of the type of director that is likely to be in these departments with characteristics that are favorable to innovation, then controlling for ambition of director should considerably reduce the partial. The methods of partial correlation will be used to do a path analysis. Path models will be tested by the partial correlation coefficients and included to illustrate the results. Path coefficients will then be computed and the models will be drawn as causal models with these path coefficients included.

A second procedure will be to test for interaction between the organizational and director variables. As has been previously discussed, the organizational resources available to the director will determine, to some extent how much he can innovate as will his desire to innovate. However, the director's desire to innovate will not have the same effect on innovation at all levels of resources.

Analysis of Three-Variable Path Models

In this section, partial correlation coefficients between the organizational and ambition measures with innovation are

presented. Causal model path diagrams with coefficients are also presented to help assess the relative influence of the two sets of independent variables. Partial correlation and regression coefficients were computed and path diagrams developed for the department resource variable and each of the ambition measures taken separately. Although several path models were tested, only those which were supported by the partial correlations and the theoretical analysis are reported.

Noted on the path analytic diagram are the direction and extent of the relationship between the major variables. All of those variables which have been indicated as causally prior are taken as the determinants of each successive variable. A number of conventions are usually employed in the representation of this type of model. They are:

1. Causal relationships are indicated by one-way, straight lined arrows.
2. Non-causal relationships are represented by curved, double headed arrows, representing covariation.
3. Those variables posited as being causal are drawn to the left of those regarded as the effect.
4. The numerical quantities associated with each arrow represent the extent and direction of the measured relationship.²¹ In this analysis, the standardized regression coefficients will be used as the path coefficients where causality is implied.²² Covariation will be measured by the zero-order correlation coefficient. Similarly, the zero-order correlation coefficient can

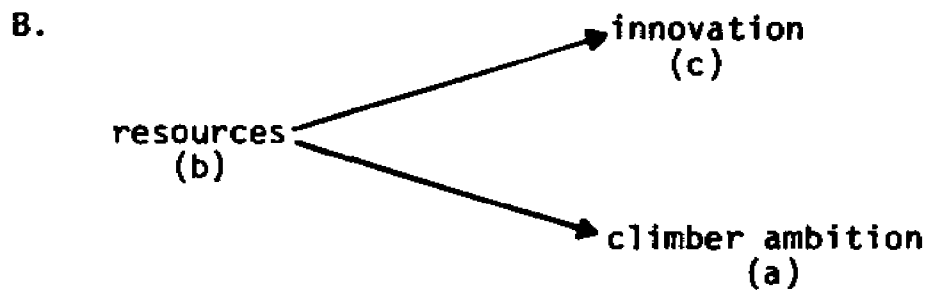
be shown to be equal to the standardized regression coefficient when only one independent variable is associated with any given dependent variable.²³

Accompanying the path diagrams are the regression equations and regression statistics for the path models. The unstandardized regression coefficients (b) and their standard errors (S.E., given in parentheses) are given with the equations. The value of the F statistic for the equation is also included.

Resources, Climber Ambition and Innovation

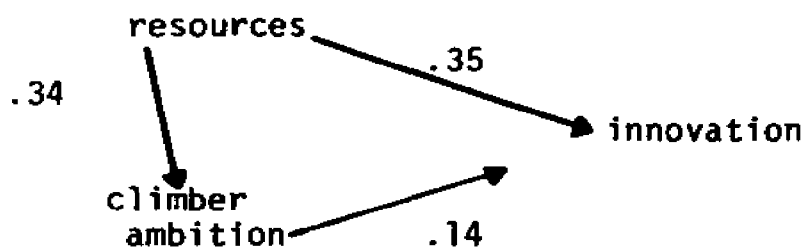
Controlling for resources reduces the correlation between climber ambition and innovation from $r = .25$ to a partial of $r = .14$, indicating that some but certainly not all of the correlation of climber ambition with innovation was due to their common correlation with resources. Controlling for climber ambition changes the correlation between resources and innovation from $r = .39$ to a partial of $r = .34$, indicating that resources has a substantial effect, separate from the ambition of the director, on innovation. The path model in Figure 4-2 was consistent with these data. This is one in which resources has a substantial effect on innovation. Path coefficients are included for the model. Figure 4-1 gives the path diagrams from which the predicted partials were generated. The statistics by themselves do not allow an adequate discrimination to be made between the two models. Assumptions must be made about the effect of variables and other evidence must be used in order to make a conclusion concerning which of the two models is more appropriate.²⁴

A. climber ambition ----- resources ----- innovation
 (a) (b) (c)



<u>Predicted correlations</u>	<u>Zero order correlations</u>	<u>Actual Correlations</u>
$r_{bc.a} = .39$	$r_{bc} = .39$	$r_{bc.a} = .34$
$r_{ac.b} = 0$	$r_{ac} = .26$	$r_{ac.b} = .14$

Figure 4-1.--Path Diagram for Climber Ambition and Resources with Innovation



$$R^2 = .17$$

Regression equation for path diagram in Figure 4-2.

Innovation =	Resources	+	Climber ambition	F = 2.31
b (S.E.)	1.28 (.69)		.14 (.18)	
beta	.35		.14	

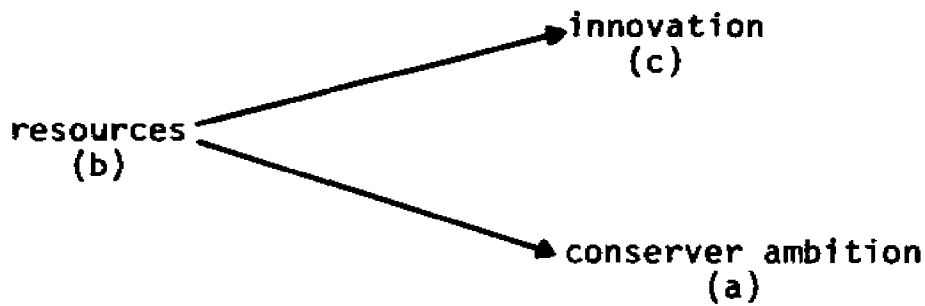
Figure 4-2.--Path Model with Path Coefficients for Climber Ambition, Resources, and Innovation.

The model in Figure 4-2, Model B from Figure 4-1 with a direct link from ambition to innovation, was chosen, as it is more reasonable to suppose that the resources of the department are responsible for the ambition of the director than that the director causes the departmental resources although he may influence them to some extent. Given the range of resource levels in this set of departments it is unreasonable to assume that the type of director is responsible for the level of resources. So although the director uses resources to innovate, the causal arrow is drawn from resources to ambition to indicate that it is the resources of the department which cause the ambition of the director, either by the climber being attracted to departments with greater resources, or the directors in departments with greater resources developing climber ambitions once they are there.

Resources, Conserver Ambition, and Innovation

Figure 4-3 gives a path diagram and predicted partial coefficients generated from it. Actual partial and zero-order correlations are also given. Model A shows the first diagram tested for climber ambition and the predicted partials. However, since one can reasonably expect some direct influence of ambition on innovation, Model B is drawn and the predicted partials modified. The data indicates substantial separate effects of both resources and ambition on innovation. However, were it not for the conserver ambition of the director, resources would be even more highly correlated with innovation. Figure 4-4 shows the path analytic model with path coefficients added.

A.

Predicted correlations

$$r_{ac.b} = 0$$

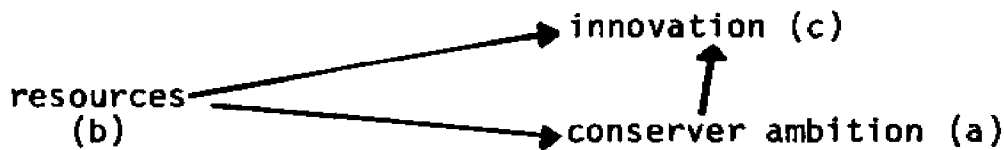
$$r_{bc.a} = .39$$

Zero-order correlations

$$r_{ac} = -.52$$

$$r_{bc} = .39$$

B.

Predicted correlations

$$r_{ac.b} = 0$$

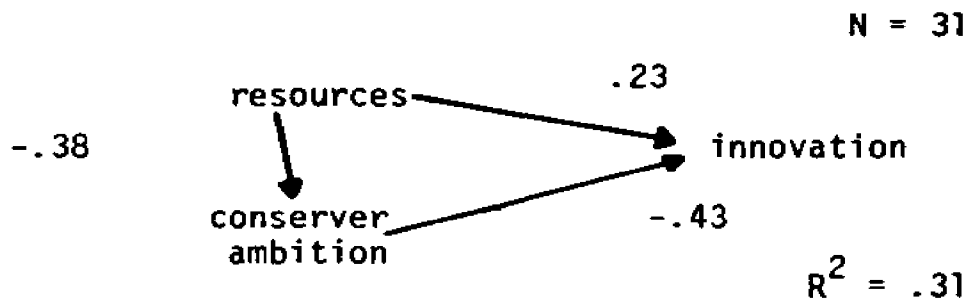
$$r_{bc.a} = 0 \quad r_{bc}$$

Actual correlations

$$r_{ac.b} = -.43$$

$$r_{bc.a} = .25$$

Figure 4-3.--Path Diagram for Conserver Ambition and Resources with Innovation.



Regression equation for path diagram in Figure 4-4.

Innovation =	Resources	+	Conserver Ambition	F = 6.19
b (S.E.)	.85 (.63)		-.45 (.18)	
beta	.23		-.43	

Figure 4-4.--Path Diagram with Path Coefficients for Conserver Ambition, Resources, and Innovation.

The negative correlation between resources and conserver ambition indicates that conserver ambition is stronger among the directors of departments with fewer resources. However, there appears to be a direct effect of conserver ambition on innovation, which is, as expected, negative. So we find that resources encourage innovation, conserver ambition tends to block it. Although resources seem to influence conserver ambition, that is, conservers tend to be in departments with fewer resources; conservers may also have the effect of dampening the growth of resources.

Resources, Policy Ambition, and Innovation

Although there is very little correlation between the strength of policy ambition and resources ($r = .06$), there is a somewhat stronger positive correlation between this type of ambition and innovation. Neither of the previous diagrams is likely to be descriptive of this situation.

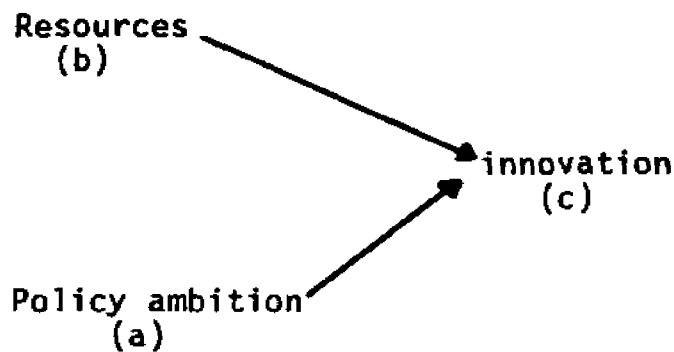
The small correlation which appears between the degree of policy ambition and resources suggests that the effects of resources and ambition on innovation will be almost completely separate. The partials are not likely to be much different than the zero-order correlations. The diagram and predicted partials in Figure 4-5 are those expected for policy ambition and resources with innovation. The partials are essentially the same as the zero-order correlations. Only the actual partial between resources and innovation is increased slightly. But the effects of resources and ambition on innovation are essentially separate from each other.

Figure 4-6 shows the path diagram with path coefficients. The small correlation between resources and policy ambition is illustrated by a double-headed arrow. I had speculated that those with a high degree of interest in influencing policy may be in smaller departments due to their age and inexperience, hypothesizing that these would be younger directors just out of school with their M.D. or M.P.H. Thus, someone with this type of ambition would be found in smaller departments. The data do not support the speculation that the degree of policy ambition is correlated negatively with resources. So no causal direction is implied between these variables at this point.

In these models resources has a stronger effect on innovation than has ambition except for the degree of conserver ambition which has a higher path coefficient than does resources (see Figure 4-4).

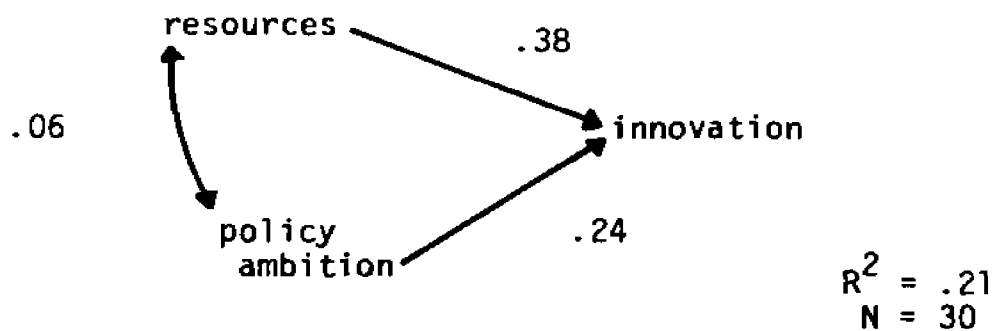
Interaction

The previous three-variable causal models have assumed additivity of the effects of independent variables. However, this might not be as realistic as a multiplicative relationship. We may expect an innovatively minded director to have more effect where there is some sufficient level of resources than where resources are very small. In very small resource departments, an innovative director might not have much, if any, effect at all on resources. Forbes and Tufte suggest that causal models and path coefficients may differ for different subsets of a set of data.²⁵



<u>Predicted correlations</u>	<u>Actual correlations</u>	<u>Zero-order correlations</u>
$r_{bc.a} = .35$	$r_{bc.s} = .39$	$r_{bc} = .39$
$r_{ac.b} = .26$	$r_{ac.b} = .26$	$r_{ac} = .26$

Figure 4-5.--Path Diagram of Resources and Policy Ambition Innovation.



Regression equation for path model in Figure 4-6.

$$\begin{array}{rclcl}
 \text{Innovation} & = & \text{Resources} & + & \text{Policy ambition} \\
 b(S.E.) & & 1.40 (.63) & & .31 (.22) & F = 3.60
 \end{array}$$

Figure 4-6.--Path Diagram with Path Coefficients for Resources and Policy Ambition with Innovation.

In order to test for interaction and to test the previous models with different subsets of the data, the health departments were divided into subgroups on the basis of resources. Innovation was then regressed on each of the ambition measures for each subgroup. If there was interaction between the level of resources and innovation the regression coefficients for the two groups would differ from each other and from the regression coefficient for the entire group of departments.²⁶ Specifically, the regression coefficients of innovation on ambition would be smaller in the group of departments with greater resources. I have argued that larger departments are able to innovate because of the resources and personnel available. Although the leadership of the director may be important, it will have less effect relative to resources than will the leadership in smaller departments. The effect of the director in the smaller departments relative to resources will be greater as these departments generally will not have the adequate staff and resources to innovate without the encouragement of the director. There may be considerable pressure from the professional staff on the directors of large departments to adopt innovative programs. This pressure would not be present in the smaller departments and the director is largely responsible for encouraging innovation.

The set of departments was divided at the median for the transformed resources variable into high and low subgroups. The regressions of innovation on ambition were run for the total group and for both subgroups. Table 4-6 presents the regression

TABLE 4-6.--Regression Coefficients of Innovation on Ambition for all Departments and Low and High Resource Departments.

	Expressed Ambition	beta	b (S.E.)
A. All Departments (N = 33)	Climber	.26	.25 (.19)
	Conservator	-.52	-.55 (.17)
	Policy	.26	.34 (.25)
B. Low Resource Subgroup (N = 16)	Climber	.37	.43 (.31)
	Conservator	-.32	-.38 (.23)
	Policy	.13	.15 (.30)
C. High Resource Subgroup (N = 15)	Climber	.16	.15 (.25)
	Conservator	-.64	-.72 (.24)
	Policy	.39	.54 (.35)

coefficients for all three groups. These results indicate that there is interaction between resources and ambition. The regression coefficient (either standardized or unstandardized) of innovation on climber ambition is greater in the subgroup with low resources than in the total or in the subgroup with high resources. There is also interaction between the other two ambition measures and resources on innovation (see Table 4-6). However, the coefficients are greater in the high resources subgroup than in the low resources subgroup for both conservator and policy ambition.

The regression coefficients show that climber ambition has a stronger effect on innovation in the low resources subgroup than in the high resources subgroup. One explanation for this is that

larger departments tend to be more innovative than small departments anyway so that the ambition of the director does not have much added effect. These larger departments have more specialties and professional personnel which lead to innovation so the innovatively minded director is not as important to them. Smaller departments, with some minimum level of resources, need the innovatively minded director in order to innovate. In fact, the director may be the most important factor in innovation for these smaller departments. Resources, both money and personnel, are not quite sufficient in themselves for these small departments but with a director who is a climber they are able to innovate. So we see the director's climber ambition having more of an effect on innovation in smaller departments. However, there may be a threshold of resources below which the ambition of the director will have little impact on innovation. If the resources are too low the department will not be able to innovate regardless of the determination of the director.

The regression coefficients for conserver ambition indicate that there is interaction between this variable and resources. The effect of conserver ambition is greater in the departments with larger amounts of resources than in those with less. Note again that the effect of the degree of conserver ambition on innovation is negative, the more the director tends to have conserver ambitions, the less innovative is his department. It appears that the conserver director may actively be a barrier to innovation in the larger departments. A discussion from Downs may help explain this.

Downs refers to what he calls the "shrinking violet syndrome."

The excessive territorial sensitivity of other social agents makes it difficult for a bureau to avoid stirring up conflicts when it changes its own behavior. Since these conflicts are often extremely costly to the bureau, it normally seeks strategies by which it can minimize the amount of conflict engendered while it is carrying out its necessary changes.²⁷

Downs claims that any change in a bureau which has external effects will engender some conflict in the environment. If this is the case, then we would expect conservers to be less willing than climbers to enact changes and to enact those changes which are likely to cause the least conflict. In the public health departments, conflict is most likely to come from the local medical association and recalcitrant county commissioners.²⁸

The conserver, in his desire to minimize conflict, will not be as likely as the climber to adopt new, non-traditional programs. If his department grows, it will be in terms of expanding existing programs rather than initiating new ones. The climber, on the other hand, will be more willing to face conflict and will be more willing to adopt new programs. The climber will not be as frightened by conflict as the conserver. Since he is more willing to change jobs he does not have to worry about living in the environment. He will probably try to affect changes that public health professionals who he views as significant perceive as important and will weight the benefits of the new programs against the dis-utility of conflict.

Perhaps the most important thing is that those who are conservers do not actively support innovation in smaller departments.

Since those departments are not likely to be innovative without the influence of an innovative minded director, the conservator does not block innovation as it would not take place without the help of the director. The larger departments would be more innovative if it were not for the degree of conservator ambition. The result is a smaller effect of conservator ambition on innovation in the departments with lower resources.

Regression equations including an interaction term were run and are given in Table 4-7. The interaction term was Resources x Ambition and was added to the regression equations for the path models to determine how much additional variance could be explained by the interaction between these two variables. The inclusion of the interaction term contributed very little to the amount of variance explained. The R^2 term for the original equation without the interaction term is presented for comparison in Table 4-7. As Mohr found, although interaction is present, the additive models provide almost as good a fit to the data as do the equations with interaction terms.²⁹ Blalock notes that fairly good additive approximations of relationships that are actually more complex are to be expected.³⁰

Four Variable Models of Innovation

In the final section, a path model is developed to link together all of the sets of factors dealt with in the analysis up to this point. This complete model includes the four factors: Departmental resources, director background characteristics,

TABLE 4-7.--Regression Equations for Multiplicative Four-Variable Models.

Innovation = Resources + Climber ambition + Resources x Climber ambition				
b (S.E.)	.50 (2.69)	.64 (1.68)	.13 (.44)	
beta	.136	.64	.48	
R ² = .18	(R ² without interaction term = .17)			
F = 1.84				
Innovation = Resources + Conserver ambition + Resources x Conserver ambition				
b (S.E.)	.41 (2.35)	-.21 (1.25)	.07 (.35)	
beta	.112	-.20	.295	
R ² = .32	(R ² without interaction term = .31)			
F = 3.99				
Innovation = Resources + Policy ambition + Resources x Policy ambition				
b (S.E.)	.14 (1.22)	.68 (1.50)	.10 (.39)	
beta	.31	.52	.29	
R ² = .21	(R ² without interaction term = .21)			
F = 2.34				

director ambition, and innovation. The transformation of the 1971 total budget figure was used as an indicator of departmental resources. A composite index of the background characteristics of the director was constructed. The variables age, number of years of private practice, and advanced degree in public health were scored so that they ranged from 0 to 100 and the director's score obtained by summing the score for each and dividing by the number of variables. Some of the values for the number of years of private practice were missing so the sum of the remaining two variables in the index was divided by two. If the number of years of private practice was available the sum was divided by three. The advantages of this procedure are that it weights each variable in the index the same and allows for similar ranges and variances for each. It also aids in handling the missing data.³¹ For the index private practice was not included as a separate variable. However, those directors without any private practice were assigned the value 0 on the variable number of years of private practice and included in this manner.

This index is used to facilitate the completion of the linkages among the four aspects of the model. The analysis of only two measures of ambition will be included here: climber and conserver ambition. Path models will be presented using measures of these two types of ambition. Figures 4-7 and 4-8 show the correlations between the indices for each of the factors in the schematic model.

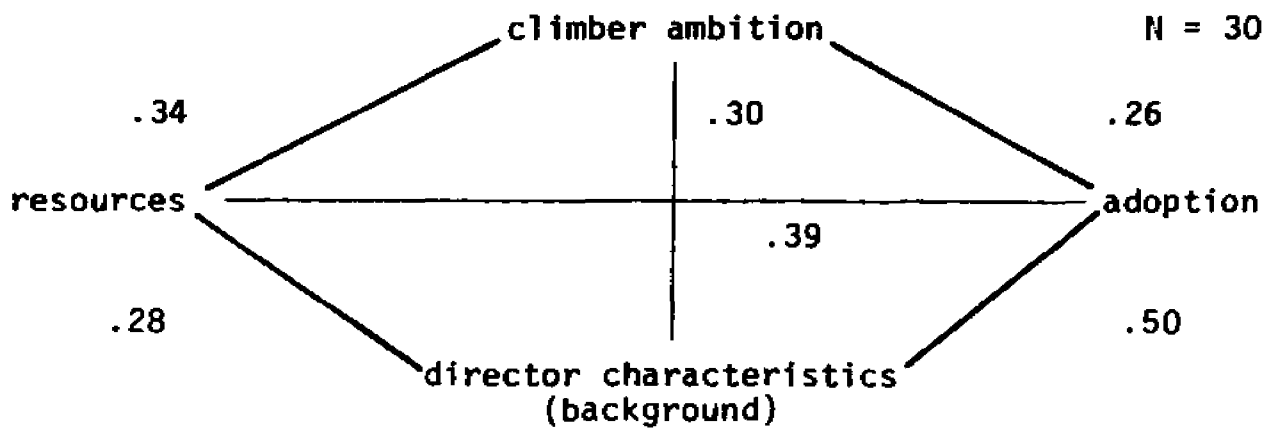


Figure 4-7.--Correlations Among Four Elements of Departmental Innovation Model Using the Degree of Climber Ambition.

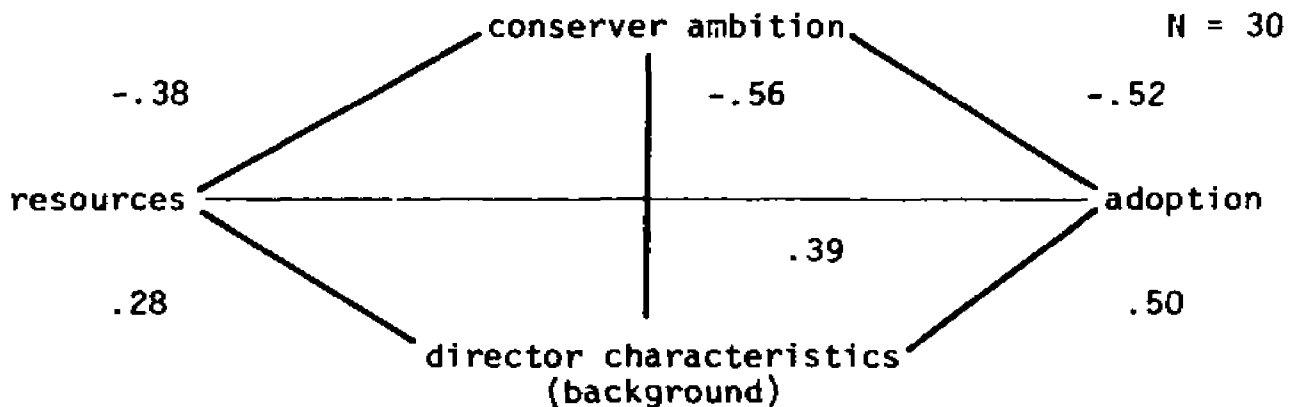


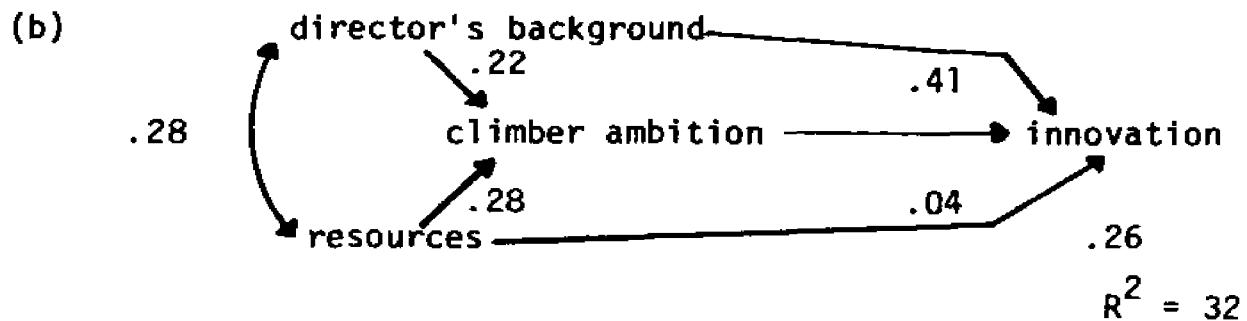
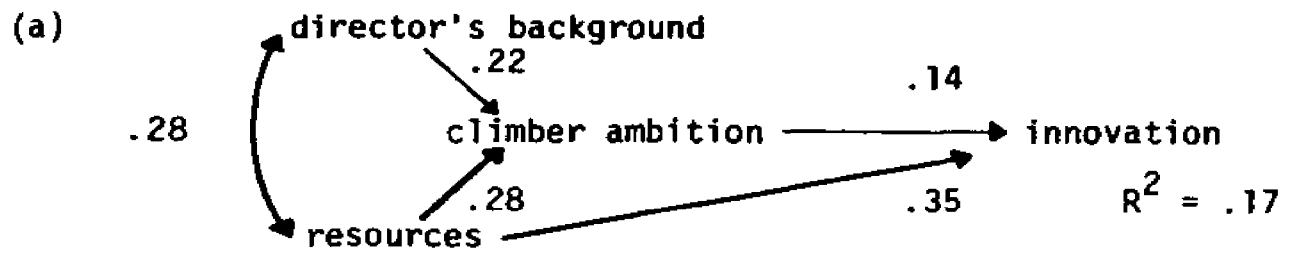
Figure 4-8.--Correlations Among Four Elements of Departmental Innovation Model Using the Degree of Conserver Ambition.

Two models are evaluated for each type of ambition. The first model includes a direct path from background characteristics to director ambition only and no direct path from background to innovation. The second model includes a direct path from background to innovation. The assumption of additivity, as we saw in the previous section is not valid. Interaction effects will be discussed in the following section.

Path models for climber ambition are illustrated in Figure 4-9. Notice that a substantially greater amount of variance in innovation is explained by the model including a direct path from background to innovation.

Apparently a substantial amount of the director's influence on innovation is a direct result of his training and experience although this is also correlated with his ambition.

Resources explains slightly more of the variance in the model with climber ambition than the one with conserver ambition. Background variables account for much more of the variance in conserver ambition than in climber ambition. This is consistent with the assertion that ambitions develop over time and that structural factors tend to give rise to ambitions. That is, a person's aspirations rise with experience in a large department. However, background variables, especially age and tenure in private practice are very influential in determining a director's degree of conserver ambition. The degree of conserver ambition is easily predicted from the background variables; the degree of climber ambition is less so.



Regression equation for (b).

$$\text{Innovation} = \text{Resources} + \text{Climber ambition} + \text{Director's background}$$

b(S.E.)	.97 (.65)	.04 (.17)	.03 (.01)
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$$F = 4.13$$

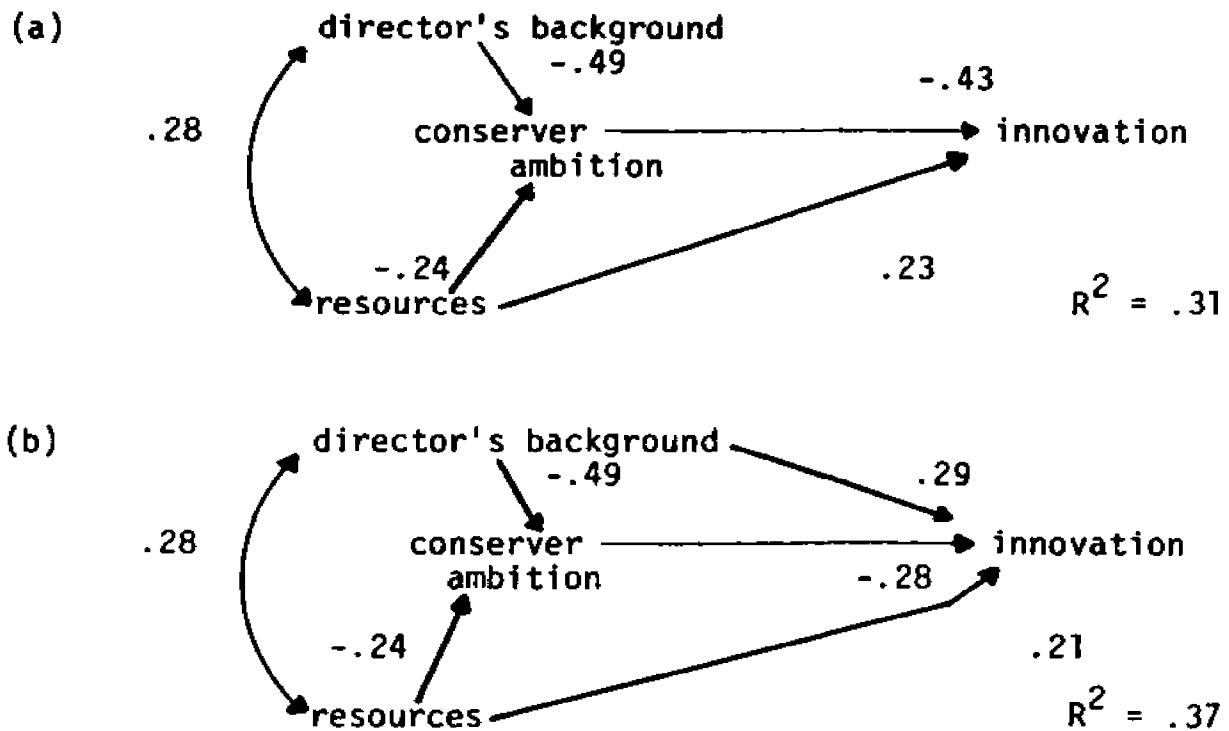
$$N = 30$$

Figure 4-9.--Causal Path Models for Climber Ambition.

Climber ambition in general is less well specified than conserver ambition, leading to the speculation that bureaucrats engage in some sort of contingency planning; that their backgrounds may predispose them to be a climber but that these ambitions only develop through experience and success with jobs and perhaps subsequent advancement. Conserver ambition, on the other hand, is fairly well developed by the background variables. The path models for conserver ambition are shown in Figure 4-10.

Inspection of these models indicates that more of the effect of background characteristics of training, age, and private medical experience on innovation is transmitted through the director's ambition for conserver ambition than for climber ambition. When the background variable is included in the models, degree of climber ambition has less separate effect than does the degree of conserver ambition. These findings are consistent with the three-variable models considered in the previous section. These causal path models in Figures 4-9 and 4-10 assume, however, that interaction between the independent variables is not present or is negligible. This assumption is not valid as was seen in the previous section.

A term for interaction between resources and ambition was added to the regression equations. These equations are given in Table 4-12. As was the case with the previous models, the additive models provides as good a fit as do the multiplicative models. The inclusion of the interaction term adds very little to the amount of variance explained.



Regression equation for (b).

$$\text{Innovation} = \text{Resources} + \text{Conserver ambition} + \text{Director's background}$$

b(S.E.)	.77 (.62)	-.29 (.21)	.02 (.01)
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F = 5.09

N = 30

Figure 4-10.--Causal Path Models for Conserver Ambition.

TABLE 4-8.--Regression Equations for Multiplicative Five-Variable Models.

Climber Model								
Innovation	=	Resources	+	Climber ambition	+	Director's background	+	Resources x Climber ambition
b (S.E.)		-.27 (2.5)		.84 (1.6)		-.03 (.01)		.21 (.41)
beta		-.07		.84		-.42		.76
$R^2 = .33$ (R^2 without interaction term = .32)								
F = 3.08								
Conservation Model								
Innovation	=	Resources	+	Conservation ambition	+	Director's background	+	Resources x Conservation ambition
b (S.E.)		.31 (2.2)		-.04 (1.2)		-.02 (.01)		.07 (.34)
beta		.08		-.04		-.29		.31
$R^2 = .37$ (R^2 without interaction term = .37)								
F = 3.69								

Chapter IV--Footnotes

¹Downs, op. cit., p. 88. Downs describes advocates as ". . . Loyal to a broader set of functions or to a broader organization. . . . They also seek power because they want to have a significant influence upon policies and actions concerning those functions or organizations."

I am focusing on Downs' two purely self-interested officials (p. 88). Downs may be describing a strategy that climbers use.

²Black (1970), op. cit., p. 867-872.

³See Chapter I.

⁴Mohr, dissertation, pp. 154-158.

⁵Schlesinger, op. cit., p. 6.

⁶Mohr (1969), op. cit.; Arthur S. Goldberg, American Political Science Review (1969), p. 16. Goldberg tests a rationality model which includes the assumption that "group based norms . . . produce effective rationality with regard to the goals of the group." Katz and Coleman, op. cit., also discuss this.

⁷Downs, op. cit., pp. 92-103.

⁸Mack, op. cit., pp. 61-65.

⁹Schlesinger, op. cit., pp. 116-117.

¹⁰J. Cohen, "Multiple Regression As a General Data Analytic System," Psychological Bulletin (1968), p. 431.

¹¹Nie, Bent, and Hull, Statistical Package for Social Science, op. cit.

¹²See my analysis in Chapter III, pp.

¹³Mohr, op. cit., p. 120.

¹⁴See my conclusions concerning the department variables at the end of Section One, Chapter III.

¹⁵Mark Levin suggests using the variable with the highest loading on the first principle component as the best indicator of

a set of highly correlated variables. Resources fulfill this criteria. See Mark S. Levin, "Standard Scores As Indices: The Pitfalls of Not Thinking It Through," American Journal of Political Science, 17 (May, 1973), pp. 431-440.

¹⁶Nie, Bent, and Hull, SPSS, op. cit.

¹⁷One extremely high budget figure skewed the distribution for resources 1971 greatly. The budget figure from this department was missing for the 1970 data. Some analysis with this latter set showed that resources were correlated with innovation. An amazing similarity was evident using the budget figures for 1970 and the results of some analysis with innovation and size of department 1971. However, the data for 1970 was not as complete as for 1971, so 1970 was not used. The analysis done with a transformation of the 1971 resources showed results comparable to the brief analysis done with 1970 resources.

¹⁸Nie, Bent, and Hull, op. cit.; N. R. Draper and H. Smith, Applied Regression Analysis (New York: Wiley, 1966), and J. B. Kruskal, "Transformations of Data," in International Encyclopedia of the Social Sciences, ED. David L. Sills (New York: MacMillan, 1968), Volume 15, pp. 182-192. These later two sources contain good discussions of the use of transformations.

¹⁹Mack, op. cit.; Marjorie Hershey, "Incumbency and the Minimum Winning Coalition," American Journal of Political Science, 17 (August, 1973), pp. 631-637.

²⁰I did some analysis using other departmental variables. The results were remarkably similar to those using the transformed resources variable.

²¹Smith, op. cit., p. 117.

²²Nie, Bent, and Hull, op. cit.

²³Because my measure of ambition may not have the precision of interval level measures which regression procedures require, the reporting of standardized regression coefficients may appear inappropriate. However, Hubert Blalock, Jr., Causal Inferences in Non-Experimental Research (Chapel Hill: The University of North Carolina Press, 1964), pp. 32-35, discusses a justification of the use of regression techniques for ordinal level data.

²⁴Blalock, Casual Inferences.

²⁵Hugh Forbes and Edward Tufte, "A Note of Caution in Causal Modelling," American Political Science Review, 62 (December, 1968), pp. 1261-1262.

²⁶Mohr, American Political Science Review, pp. 123-124.

²⁷Downs, op. cit., p. 216.

²⁸Mytinger, op. cit.

²⁹Mohr, op. cit.

³⁰Hubert Blalock, Jr., "Theory Building and the Statistical Concept of Interaction," American Sociological Review, 30 (June, 1965), p. 375.

³¹Jackman, op. cit.

CHAPTER V

SUMMARY AND CONCLUSIONS

The data has provided considerable support for the theory outlined at the beginning of this study. Most of the hypotheses have been supported although tests of significance have not been used. A set of organizational variables expected to contribute to innovation were found to be correlated with innovation. However, these variables are also highly correlated with each other. Although each of the organizational variables acts as a mechanism to aid innovation, they are all dependent in some way upon resources. Resources were also used as an indicator of this complex of factors.

The ambition hypotheses form a set which were generally supported. However, not all of the hypotheses relating director characteristics and attitudes to ambition and departmental variables were supported. But over the entire set of ambition hypotheses, considerable evidence was outlined in support of the theory.

Background variables related to the age and experience of the director were hypothesized to be related to three measures of ambition. Generally these hypotheses received considerable support. Two attitudinal measures were also hypothesized to be associated with the measure of expressed ambition. The directors were asked

if there were any other positions in Public Health that they preferred to the one they currently held. They were also asked to indicate how content they would be to stay in their current position until retirement. These questions were generated from Downs' notion that conservers were change avoiders and that climbers were more willing than conservers to change jobs to further their interests. Since these two measures were attitudinal measures which were expected to be related to the ambitions of climbers and conservers, associations between them and the background variables were hypothesized. These were generally supported. However, since these two measures were not background characteristics nor were they direct indicators of types of ambition, they were not included in the analysis subsequent to the hypotheses relating them to background variables and ambition measures.

A fairly strong association was found between the background variables and the degree of conserver ambition. A strong correlation between the number of years of private practice and the degree of conserver ambition was particularly evident. The variance in the degree of conserver ambition was greatly accounted for by the four background variables. The relationship of the background variables with the degree of climber ambition were not as strong as the associations with conserver ambition. The hypotheses were supported however. Much less of the variance in climber ambition than in conserver ambition was explained by the four background variables. This is consistent with the findings of studies of

ambition in elective politics. Hain, for example, found a strong static ambition emerging with increasing age.

The data is consistent with the proposition that aspirations change and rise with success. We might suggest that climber ambition develops only through experience and success. Whereas the background factors greatly determine the degree of conserver ambition, the factors merely predispose directors with the proper values on these variables to be climbers. It takes a certain amount or type of experience before climber ambitions actually develop. However, it is likely that many, but not all, of those who are predisposed by the background factors to become climbers actually will be climbers.

A difference between Downs' Inside Bureaucracy and ambition theory arises in the findings. Although Downs includes learning in his theory, the ambitions of his bureaucrats are more or less given. That is, they do not develop according to relationships with other variables. An exception is made to this however. In Downs, bureaucrats become conservers as they become older and by being frustrated in other goals. So Downs allows for the development of conserver ambition but not for the development of climber ambition. A bureaucrat's climber ambition is, to a great extent, a given in Downs.

In ambition theory, on the other hand, ambitions are developed through experience. Schlesinger concludes that the opportunities afforded by the structural conditions of the routes to office give rise to ambitions appropriate for the incumbent in

that office.¹ He and others show how the electoral system acts as a filter to sift out all but those with the strongest ambitions. Some literature in psychology and organization theory concludes rather confidently that aspirations rise with success.² This is more in line with ambition theory than with Downs. As an individual succeeds and views his resources, his aspirations rise and become appropriate to his situation.

Downs claims, by hypothesis, that climbers are attracted to growing organizations because they can best accomplish their goals in that type of organization. I hypothesized that, since by definition climbers seek to maximize power, prestige, and income, that they will attempt to be in the larger departments since salary, prestige, power and visibility are greater there. But ambition theory implies that those in the larger departments, or the growing departments, would be climbers because of that situation. That is, their climber ambition would develop because of the type of department that they were in. After seeing what is possible in the present situation, the director would take on ambitions appropriate to that situation.

My data do not allow me to distinguish adequately between these two situations. However, the fact that the background characteristics are more strongly related to conserver ambition than climber, and given the association between resources and ambition, one may suggest that there is more development of climber ambition among these directors than Downs would imply. I do find relationships between the department resource variable and both

types of ambition. Climber ambition is stronger among directors of larger departments than of smaller departments and conserver ambition is stronger among the directors of smaller departments. However, we are not able to conclude from this data whether the director is in the department due to his ambition or his ambition is influenced or determined by the department. We find that the degree of climber ambition is related to innovation in the smaller departments. Innovation, however, is related to the background characteristics of the director. Very little of the effect of background characteristics on innovation is mediated by climber ambition (see Table 4-10). A much greater amount of the effect of background characteristics on innovation is transmitted through conserver ambition.

A general hypothesis that was being tested in the study is that innovation is a function of departmental variables and the ambition of the director. This hypothesis was supported. However, types of ambition affected innovation differently. Departmental mechanisms as measured by departmental resources were an important influence on innovation. However, there were differences in the relative effects of these two variables according to the level of resources. In the path models which included the background variables of the directors, these variables had a large direct effect on innovation. However, there was also a substantial direct effect of conserver ambition on innovation (see Figure 4-10). In a review of a critique of rationality models, Arrow cites Koopmans ". . . perhaps (we) should look at determinants of the utility

index rather than at the index itself."³ This study supports this suggestion. However, ambition as a variable does add a lot to the findings and an interpretation of them.

The policy implications of the study are many. First in terms of the development of a body of literature in bureaucracy, organization theory, and decision-making, a contribution is made. A number of hypotheses from Inside Bureaucracy are tested and this work is modified to be more consistent with the body of literature known as ambition theory. Findings suggest further modifications of Downs and further incorporation of ambition theory into a theory of bureaucracy.

Selection of the most important variables to focus upon or to include in research of this nature depends partly upon ones' purpose in doing the research. To an administrator or Public Health official, the most important variables may be those which have an effect on innovation and which he, the administrator, can most easily change or control. The most important theoretical variables may not be the most important administratively. To the local official or the state official, the characteristics of the innovative health officer may be most important; that is, what is important to consider in selecting a local public health department director. Making money available for travel and attending conventions is a way of encouraging the organization to keep up in the professional specialties. The manipulation of these and other mechanisms is something that local officials may want to urge the federal agencies to consider.

The administrative or political scientist may be more interested in different aspects of the research. The rationality assumption and the ambition concept may prove to be very useful to those engaged in theory building and pure rather than applied research. A great deal of literature has been developed which applies the methods of the new political economy to behavior in elective politics. However, little empirical work has been done using this approach in the study of bureaucracies and other organizations. This present study is an attempt to correct this deficiency. Although the present study was of public health departments, the claim is that the findings are appropriate to a larger class of organizations, local public bureaucracies in general.

Although this has been a study of organizational behavior, the results have implications for political development as well. The relationships between political leadership, economic development and policy output may follow a pattern similar to that among bureaucratic leadership, organizational resources and organizational output. The incentives available to leaders and entrepreneurs in the administrative and political world can have great importance. The availability of resources, which may take different forms in various settings, is also crucial. But as this study has shown, the importance of leadership may differ greatly at different levels of resources. This in turn implies that the importance of incentives for leaders and the opportunity structure, either for politicians or administrators, will also vary according to the availability of resources.

More emphasis needs to be placed on the opportunities and career paths available to bureaucrats than was done here. I have only looked at the incentives for a few positions in one profession. To adequately test and develop a theory of bureaucratic ambition the actual careers of people employed in that profession should be followed. The probability of a public health professional moving from a position to a higher position should be determined, both empirically and theoretically. An extension of the present study is advised. It would be of interest to follow the careers of the directors over time, now that I have an expression of their ambitions, to see if their ambitions change, if they have careers which correspond to their expressed ambitions, and to assess the behavior of the departments of which they are directors.

The theory and analysis has been based on an assumption of rational behavior by the individual. But the results do not support a conclusion of long range calculated planning by the bureaucrat. Rather, the individuals seem to develop ambitions based on their past and present circumstances. Those directors who are younger and have not been in private practice are more likely to be climbers. However, the background of the director is more appropriately said to predispose directors to be climbers; it does not determine their degree of climber ambition. This only develops during the director's career and may not be very great, depending on the jobs and success the director has. The younger directors may not set their career goals on a very high position but perhaps initially choose some midlevel position and then wait to see what happens before making

the decision as to how far they would like to progress during their career.

On the other hand the degree of conserver ambition is quite strongly determined by the director's past. Those without certain characteristics realize that the probabilities of their obtaining certain goals are very low. To them the probability of an adequate pay-off is too low to warrant the effort it would entail.

I have suggested that climbers use innovation as a strategy to improve their position in the sense of gaining more of the things they value. But climbers are able to innovate more easily than conservers. That is, those directors with more training and more recent training in public health, would have closer contacts with other public health professionals and find information on innovations easier to obtain.

Chapter V--Footnotes

¹Joseph A. Schlesinger, Ambition and Politics (Chicago: Rand McNally and Company, 1966).

²Ruth P. Mack, Planning On Uncertainty: Decision-Making in Business and Government Administration (New York: John Wiley and Sons, Inc., 1971), pp. 61-65.

³Kenneth J. Arrow, "Mathematical Models in the Social Sciences," in Readings in the Philosophy of the Social Sciences, ed. May Brodbeck (New York: The MacMillan Co., 1968), pp. 644-645. Also see Rutledge Vining, "Koopmans on the Choice of Variables to be Studied and of Methods of Measurement," Review of Economics and Statistics, 31 (1949), pp. 77-86.

APPENDICES

APPENDIX A

PUBLIC HEALTH PROGRAMS FOR SECONDARY

INNOVATION INDEX

APPENDIX A

PUBLIC HEALTH PROGRAMS FOR SECONDARY INNOVATION INDEX

1. Evaluation of patients in long term care facilities.
2. A program by which there are regularly available, either as consultants or staff members, social or behavioral scientists who participate in program planning or execution.
3. A program for utilizing transactional analysis or behavior modification.
4. Empathy training for health department employees.
5. Community health education.
6. Research and development.
7. Research or treatment of sickle cell anemia.
8. Kidney screening (diagnostic).
9. Neighborhood health centers.

APPENDIX B

**QUESTIONNAIRE SENT TO LOCAL PUBLIC HEALTH DEPARTMENTS,
DEPARTMENT DIRECTORS AND DEPARTMENT DEPUTY DIRECTORS**

LOCAL PUBLIC HEALTH ADMINISTRATION PROJECT

Part I.

First of all we would like to obtain some information about this department and its involvement in a number of public health activities.

Full official name of health unit.

What was the department's total expenditure for the most recent complete fiscal year?

What is the department's total budget request for the current fiscal year?

1. Does your department have a program in family planning?

☐ Yes

☐ No

IF YES

When did your department first adopt this program? (to the nearest month and year)

Would you say that the department's involvement in this program is

☐ Fairly extensive

☐ Temporary or only partial

☐ Very limited

Is this program funded primarily through

☐ Local funds

☐ State funds

☐ Federal funds

Is your department expanding or decreasing activity in this program?

☐ Expanding

☐ Decreasing

☐ Neither expanding
nor decreasing

IF NO

Has your department ever had a program in family planning?

☐ No

☐ Yes

During which years? _____

What is the main reason for not presently having a program in family planning?

Does your department have plans for developing or adopting a program in family planning in the near future?

☐ Yes ☐ No

2. Does your department have a program in Migrant Health Care?

☐ Yes ☐ No

IF YES

When did your department first adopt this program?

Would you say that your department's involvement in this program is

☐ Fairly extensive
☐ Temporary or only partial
☐ Very limited

Is this program funded primarily through

☐ Local funds ☐ State funds ☐ Federal funds

Is your department expanding or decreasing involvement in this program?

☐ Expanding ☐ Decreasing ☐ Neither expanding nor decreasing

IF NO

Has your department ever had a program in Migrant Health Care?

☐ No ☐ Yes During which years? _____

What is the main reason for not presently having a program in Migrant Health Care?

Does your department have plans for developing or adopting a program in Migrant Health Care in the near future?

☐ Yes ☐ No

3. Does your department have a Drug Abuse Program of any sort?

☐ Yes ☐ No

Is your department expanding or decreasing involvement in this program?

☐ Expanding

☐ Decreasing

☐ Neither expanding
nor decreasing

IF NO

Has your department ever had an Alcoholism Control Program?

☐ No

☐ Yes

During which years? _____

What is the main reason for not presently having an Alcoholism Control Program?

Does your department plan to develop or adopt an Alcoholism Control Program in the near future?

☐ Yes

☐ No

6. Does your department have an On Site Multi-Phasic Screening Program?

☐ Yes

☐ No

IF YES

When did your department first adopt this program?

Would you say that your department's involvement in this program is

☐ Fairly extensive

☐ Temporary or only partial

☐ Very limited

Is your department expanding or decreasing involvement in this program?

☐ Expanding

☐ Decreasing

☐ Neither decreasing
nor expanding

IF NO

Has your department ever had an on Site Multi-Phasic Screening Program?

☐ No

☐ Yes

During which years? _____

What is the main reason for not having an On Site Multi-Phasic Screening Program?

Does your department plan to develop or adopt an On Site Multi-Phasic Screening Program in the near future?

☐ Yes

☐ No

7. To what extent does your department have a philosophy of comprehensive health care or over-all health promotion as contrasted to focusing on disease treatment? (check only one)

- ☐ Not at all
- ☐ Not at all but may develop a philosophy in this direction
- ☐ Are trying or hoping to develop a philosophy in this direction
- ☐ A distinct philosophy of this sort to a small extent
- ☐ To a great extent

We are also interested in your assessment of the extent to which your department is engaged in each of the program areas described below. Each program area is followed by a set of statements. Choose that one which best describes your department's involvement in the program area.

1. Evaluation of patients in long term care facilities.

- ☐ No activity to speak of and none planned
- ☐ No activity to speak of but are likely to plan some in the near future
- ☐ No activity to speak of but are presently engaged in planning this type of program
- ☐ Some activity but very little
- ☐ A fair amount of activity or a partial program with plans to expand
- ☐ A great deal of activity in this area
- ☐ A comprehensive program

2. A program by which there are regularly available , either as consultants or staff members, social or behavioral scientists who participate in program planning or execution.

- ☐ No activity to speak of and none planned
- ☐ No activity to speak of but are likely to plan some in the near future
- ☐ No activity to speak of but are presently engaged in planning this type of program
- ☐ Some activity but very little
- ☐ A fair amount of activity or a partial program with plans to expand
- ☐ A great deal of activity in this area
- ☐ A comprehensive program

3. A program for utilizing transactional analysis or behavior modification?

- ☐ No activity to speak of and none planned
- ☐ No activity to speak of but are likely to plan some in the near future
- ☐ No activity to speak of but are presently engaged in planning this type of program
- ☐ Some activity but very little
- ☐ A fair amount or a partial program with plans to expand
- ☐ A great deal of activity in this area
- ☐ A comprehensive program

4. A program for providing empathy training for health department employees.

- ☐ No activity to speak of and none planned
- ☐ No activity to speak of but are likely to plan some in the near future
- ☐ No activity to speak of but are presently engaged in planning this type of program
- ☐ Some activity but very little
- ☐ A fair amount of activity or a partial program with plans to expand
- ☐ A great deal of activity in this area
- ☐ A comprehensive program

5. A community health education program.

- ☐ No activity to speak of and none planned
- ☐ No activity to speak of but are likely to plan some in the near future
- ☐ No activity to speak of but are presently engaged in planning this type of program
- ☐ Some activity but very little
- ☐ A fair amount of activity or a partial program with plans to expand
- ☐ A great deal of activity in this area
- ☐ A comprehensive program

6. A procedure for Research and Development of new programs.

- ☐ No activity to speak of and none planned
- ☐ No activity to speak of but are likely to plan some in the near future

- ☐ No activity to speak of but are presently engaged in planning this type of program
- ☐ Some activity but very little
- ☐ A fair amount of activity or a partial program with plans to expand
- ☐ A great deal of activity in this area
- ☐ A comprehensive program

7. A program in research or treatment of sickle cell anemia.

- ☐ No activity to speak of and none planned
- ☐ No activity to speak of but are likely to plan some in the near future
- ☐ No activity to speak of but are presently engaged in planning this type of program
- ☐ Some activity but very little
- ☐ A fair amount of activity or a partial program with plans to expand
- ☐ A great deal of activity in this area
- ☐ A comprehensive program

8. A kidney screening program.

- ☐ No activity to speak of and none planned
- ☐ No activity to speak of but are likely to plan some in the near future
- ☐ No activity to speak of but are presently engaged in planning this type of program
- ☐ Some activity but very little
- ☐ A fair amount of activity or a partial program with plans to expand
- ☐ A great deal of activity in this area
- ☐ A comprehensive program

9. A program for setting up and maintaining neighborhood health centers.

- ☐ No activity to speak of and none planned
- ☐ No activity to speak of but are likely to plan some in the near future
- ☐ No activity to speak of but are presently engaged in planning this type of program
- ☐ Some activity but very little
- ☐ A fair amount of activity or a partial program with plans to expand
- ☐ A great deal of activity in this area
- ☐ A comprehensive program

Part II.

This part of the questionnaire asks for information about the people who direct the local health departments. If you have already filled out this part in your capacity as the director of another department, it is not necessary to fill it out again.

1. What is your present position? (give official title)

2. When did you begin in this position?

3. What position did you hold prior to this one? (official title and name of organization)

4. What is your age?

5. Do you have a degree in the healing arts?

☐ M.D.

☐ O.D.

☐ D.V.M.

☐ D.D.S.

Do not have a degree in the healing arts. ☐

If you have a degree in one of the healing arts, when and where did you receive this degree?

6. Do you now have a Master's Degree in Public Health or its equivalent?

☐ Do not have M.P.H. or equivalent

☐ Do not have M.P.H. or equivalent but have done graduate work in Public Health

☐ M.P.H.

☐ M.P.H. equivalent (Explain)

When did you, or when do you plan to, receive the M.P.H. ?

7. Could you please list the degrees, not included above, that you have beyond the B.S. or B.A.

8. Did you ever maintain a private practice?

☐ Yes

☐ No

If yes, during which years?

9. When did you take your first public health position?

What was the nature of the position?

10. Could you please list the different positions that you have had in public health during the past fifteen years. (give name of position--or describe--and name of organization.)

11. Is there another public health position that you would like?

☐ Yes

☐ No

If yes, what would that be?

12. What would like your next public health position to be?

13. Would you be content to stay in your present position until retirement?

☐ Very content

☐ Content

☐ Indifferent

☐ Not content

☐ Not at all content

14. Which professional journals do you regularly receive and read?

15. What two sources of information about new developments in public health are the most important to you?

16. About how many meetings with other public health physicians or officials are you able to attend annually?

Meetings in the state of Michigan _____

Meetings outside of the state of Michigan _____

17. Could you please rank in number order the following positions in terms of your preference for them. (number 1 the most preferred, number 8 the least preferred)

- ☐ Director of a large public health department
- ☐ Director of a small, but growing, public health department
- ☐ Director of a small public health department that is relatively stable in size
- ☐ Bureau chief in a state department of public health
- ☐ Program chief in a state department of public health
- ☐ A position which would allow you to exercise the most influence on the policy direction of public health
- ☐ Director of a department that has instituted a number of progressive programs
- ☐ Director of a department that would allow you to institute a number of progressive programs

18. How would you rank in number order the importance of the following factors in recognizing a good public health director? (number 1 the most important, number 6 the least important)

- ☐ His knowledge of new programs in public health
- ☐ The efficiency with which his department delivers or provides health care
- ☐ The reputation he has among his fellow public health physicians
- ☐ The confidence that the local health board places in him
- ☐ The number of publications he has in professional journals
- ☐ The quality of leadership he provides for his staff

19. What one thing would you most like to accomplish in your career in public health?

20. What one goal would you most like to see the practice of public health pursue?

Feel free to use this additional space to complete your answers to any of the questions or to make any added comments that you may wish.

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