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Ph.D. degree in School of Labor
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THE INFLUENCE OF TRUST ON THE IMPLEMENTATION
OF A MANAGEMENT-BY-OBJECTIVES SYSTEM

By

Dow Scott

A DISSERTATION

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ABSTRACT

THE INFLUENCE OF TRUST ON THE IMPLEMENTATION OF A MANAGEMENT BY OBJECTIVES SYSTEM

By

Dow Scott

The purpose of the research was to investigate the possibility of a causal connection between interpersonal trust and the implementation of a management by objectives (MBO) system. The basic proposition tested was that employee trust in supervision, management and the MBO consultant would determine how the employee would assess the usefulness of MBO for his/her own job and how he/she would evaluate the impact of the MBO system on the entire organization.

In order to test this proposition, a Likert-type questionnaire was designed to measure employee perceptions of trust (the independent variable) in those people who were instrumental in the MBO process; i.e., trust in the supervisor, trust in management and trust in the MBO consultant. This individual questionnaire was administered in a field location of three points in time over a six month period.

Time 1: Prior to the implementation of the MBO program;

Time 2: After objectives were established by superior and subordinates; and

Time 3: As objectives were being formulated by the top management team.

The assessment of the MBO program is the dependent variable. This was measured using a self report Likert-type questionnaire at time 2 and time 3. In addition, race, age and sex data were collected on the subjects. These factors are believed to influence trust levels because of the cultural differences experienced by people having these demographic differences.

To check the "undimensionality" of the trust and MBO assessment scales, a "principles" components analysis with an orthogonal varimax rotation was used. Both sets of scales had undimensional coefficient alpha which exceeded .80. Both scales also had high levels of test-retest reliability.

The subjects in this study were the 169 managerial and professional employees in a large department of city government. They were responsible for public transportation within the city. This department has 800 buses in operation which makes it one of the largest city bus systems in the United States.

The MBO treatment was conducted by an experienced team of management consultants who spent 240 man days over a period of 21 months. However, the study focus on the first nine months of the project when 95% of the consulting activities occurred. During these nine months the consultants were involved in 1) data gathering from all departments, 2) top management teaching, 3) training all managerial and professional employees, 4) establishing linkages between MBO and the budgeting process, 5) initial goal setting with the director

of the organization and each of the division managers who reported to the director, and 6) establishing and staffing a position in management to monitor and maintain the MBO system. This installation has had considerable support from management and represents a comprehensive system-wide approach to MBO.

Cross-lagged panel correlational analysis and dynamic correlational analysis were used to draw causal inferences. The results indicate that the employee's trust in his supervisor and/or in management will determine the perceived value of MBO for carrying out the employee's job and the perceived impact of the MBO system on the entire organization. However, the analysis showed no such causal relationship between trust in the consultant and the assessment of the MBO process. Although this finding did not confirm a causal relationship, one cannot rule out the proposed causal linkage. The significant change in consultant trust levels evident between times 2 and 3, and the correlations between variables supported the contention that an interactive relationship exists.

It was concluded from these analyses that trust is an important determinant of the successful installation of MBO. This study suggests that organizations which have low trust levels should utilize other organization development strategies to increase trust levels before they attempt to install an MBO system.

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CHAPTER 1

REVIEW OF LITERATURE

Research Problem

Goal setting is recognized as a pervasive phenomenon within an organization. Because goal setting is a recurring adjustment to change, Thompson (1967) contends that the difference between effective and ineffective organizations can well be the initiative exercised by those in the organization who are responsible for goal setting. The management strategy of formalizing the goal setting process assumes that effectiveness and efficiency will be enhanced if goals can be made explicit and integrated with the personal goals of the employee.

The most widely used mechanism for formalizing the goal setting process is Management By Objectives (MBO). Since Drucker first wrote about MBO a vast literature and an army of consultants have expanded this concept until it has become an approach to management in its own right. Because of persuasive arguments made by theorists and management consultants that MBO can have a dramatic impact on organizational effectiveness, one can find MBO terminology in common usage in management circles. In fact, one survey reported that over 83 percent of business organizations contacted were using MBO

(EDP Leads...1973).

Although rigorous empirical research has been limited, findings indicate that MBO can have a substantial impact on individual performance and organizational effectiveness (Raia, 1963; Tosi and Carroll, 1968, 1969; Ivancevich, 1974). Even so, two surveys have found that a large number of managers are dissatisfied with their MBO program (EDP Leads...1973; Schuster & Kindall, 1974). Although one can certainly identify numerous reasons for such disappointment, a review of the MBO and organizational change literature points to the primacy of interpersonal trust as an explanation for the failure of MBO to facilitate managerial processes.

The concept of interpersonal trust, like that of motivation, does not take physical form but is a construct to which theorists in the social sciences attribute individual behavior. In fact, the formation of trust, reduction of fear and the acceptance of self and others is often the focus of organizational development efforts. High levels of trust are seen as linked with efficient work group functioning, long term organizational effectiveness and the willingness of people to make adaptations to environmental change. Trust affects one's willingness to share meaningful information, one's commitment to take action, and the satisfaction one experiences in relationships with other persons.

Extensive literature in education, psychology, counseling, criminology, and communications identifies interpersonal trust as a stable predisposition and as the key

ingredient of cooperative relationships. Thus, because of the demand for cooperation inherent in the MBO process, trust would seem theoretically to be instrumental in the complete implementation of such a program for two reasons:

1. The actual goal or objective setting process is negotiated on face-to-face interaction between superior and subordinate. Both parties must make commitments to obtain the desired future outcomes.
2. The introduction of an MBO system is a substantial organizational change. Patten (1972) contends that the organizational climate (i.e., trust) must be at a sufficient positive level for successful introduction of MBO.

However, an alternative interpretation of the Trust-MBO relationship is possible. The MBO installation could well be a causal determinant of trust for two reasons. First, MBO may enhance and make explicit the cooperative relationship between superiors and subordinates. Second, installation of MBO can be regarded as a good faith attempt by management to be more responsive to the employee. As a result, the direction of the causal relationship is unclear and so are the coping strategies given to organizations experiencing low trust. Given this competing set of hypotheses, this research is designed to determine the direction of causality between trust and MBO installation success.

Management By Objectives

In this section the MBO construct is developed. First, goal setting is discussed as the theoretical underpinning for MBO. As such, goal setting is considered to be more primary

than MBO. Then, conventional management is compared to MBO as a managerial approach. The MBO concept is defined and an ideal model is constructed. Finally, the theoretical empirical literature is reviewed in considerable detail. The focus of this review is on the installation of MBO, not the effect that MBO has on individual performance or organization effectiveness.

Goal Theory

A goal is the end toward which effort is directed, or a strategic position to be attained or purpose to be achieved (Webster, 1974). In a sense, goals never exist but are states which one seeks, that which one does not have, and once reached become assimilated and cease to be a guiding image for human effort.

Goal setting is explicitly linked with the conceptualization of an organization. In fact, organizations are distinguished from social groups by goal directed activity.

Organizations are social units (or human groupings) deliberately constructed and reconstructed to seek specific goals...organizations are characterized by: (1) division of labor, power, and communication responsibilities, divisions which are not random or traditionally patterned, but deliberately planned to enhance the realization of specific goals; (2) the presence of one or more power centers which control the concerted efforts of the organization and direct them toward its goals... (Etzioni, 1964, p. 3).

Schein (1970) refers to the underlying concept of an organization as the "idea of achieving some common goals or purpose through coordination of activities." (p. 7).

However, goal setting is much more pervasive within an organization than a simple statement of purpose or a direction in which to focus human efforts and organizational resources. Simon's (1957) concept of an organization as a decision making mechanism states explicitly that decisions are made in the context of general goals or objectives and that individual behavior is rational insofar as it selects alternatives which are conducive to the achievement of previously selected goals (p. 4). Furthermore, goals provide an orientation toward the future which offers guidelines for organizational activities. Secondly, goals can provide justification for an organization's existence. In addition, they serve as a standard by which organization members, outsiders and even society can assess the effectiveness and efficiency of the organization. In fact, effectiveness and efficiency are determined by goal setting in that effectiveness is the degree to which goals are realized and efficiency is measured by the amount of resources used to obtain the goals. Thus, organizational goals become the basis for the selection and utilization of resources, the formulation of long and short range plans, the development of policies and procedures, the determination of manpower requirements, and an assessment of organizational and managerial performance. It would be difficult to imagine how organizational activities could occur without goal setting.

Although theorists have articulated substantial reasons for goal setting, this process is neither static nor automatic. The internal and external environments are dynamic, and

thus, require the organization to not only make constant adjustments to plans, but actually change the goals themselves (Raia, 1974, p. 10-11; and Etzioni, 1964, p. 5-7). Thus, goals originate from an interactive process taking place within the organization and between the organization and its environment. Because goal setting is a recurring adjustment to change, the differences between effective and ineffective organizations can well be the initiative exercised by those in the organization who are responsible for goal setting (Thompson, 1962, p. 177-186).

A classic example of goal change is reported in a case study by Sills (1962) in which he describes a major change in goals of the March of Dimes. At one time its goal was to raise funds for medical research to eradicate polio, but when that goal was achieved, the March of Dimes had to find a new goal or cease to exist. Although goal changing may not be this dramatic in most organizations, goals must evolve or the organization will stagnate and die as its environment changes (Etzioni, 1964, p. 13-15; and Sills, 1962, p. 146-159). Goal change to improve adaptability, however, carries the inherent risk of eventually defeating the original organizational purpose (Thompson, 1964, p. 79-80, 129).

Assuming that goal formulation is on-going and dynamic, the origination of goals becomes an important element in the process. A basic assumption made by the above mentioned definitions of organizations, is the ability to articulate a set of goals that are unique to the entity. Accordingly,

theorists attempt to distinguish between organizational goals and goals held by individual members of the organization. An organizational goal expresses a set of events which contribute to the creation of an organization's primary outputs or to the fulfillment of its purpose or function. On the other hand, goals of organization members are directed at the fulfillment of the individual's needs, motives, and desires. For instance, the organizational goal of an automotive company might be simultaneously to produce safe, dependable, transportation, realize a high enough profit margin to encourage investment and/or meet emission regulations imposed by the federal government. These goals are quite different from an individual employee's or executive's goals which might be to get a promotion, make a lateral transfer and/or increase his take-home pay. This idea of separate individual and organizational goals is quite often found in the organization behavior literature.

Weick (1969) has a very different concept of organization goals. He contends that organizations are directed by the power of alliances among a small number of people. These coalitions attribute goals to activities post hoc.

This sequence in which actions precede goals may be a more accurate portrait of organizational functioning. The common assertion that goal consensus must occur prior to action obscures the fact that contangible around which it can occur, and this "something tangible" may well turn out to be actions already completed. Thus, it is entirely possible that goals statements are retrospective rather than prospective. (Weick 1969, p. 8).

This perspective would seriously undermine the notion

that organizational action was planned to shape the future of the organization as a separate entity. Under Weick's model, individual organization members, especially those in key power slots, could not be replaced without drastically changing the direction of the organization. Weick (1969) does not say goal directed behavior is absent, but that goals cannot be attributed to the collectivity of the organization.

His major concern is how goals are formulated, or the organizing process. This ongoing process is concerned with an expedient set of alliances composed for the ultimate purpose of obtaining control and imposing the wishes of the most powerful individual. The goals attributed to the organization are simply post hoc rationalization or legitimation of this process (Weick, 1969, p. 1-17).

Thompson (1967) takes an intermediate position in this discussion of goal formation and rationality. He considers the goals of the organization to be "...the future domains intended by those in the dominant coalition. Almost inevitably this includes organization members, but may also incorporate significant outsiders." (p. 27). Thus, Thompson (1967) recognizes the formation of coalitions and their influence on organization goals. However, he also emphasizes that these coalitions represent interdependent group behavior which require agreement on the allocation of organization resources. Since these goals must be agreed upon by a group, certain constraints are undoubtedly placed on individual goals and resultant goals are of greater magnitude and represent

cooperative efforts. As set by top management, the cooperative organization goals provide the criteria by which people are selected, and rewarded for their contribution in achieving these goals. Although this model presupposes the politics of goal formulation, under this model goals are established "a priori" and influence the resulting behavior.

As is evident, goal setting is a pervasive phenomenon within organizations. The conflict among theorists is not whether goal setting occurs but whether one can attribute to the organization a set of "a priori" goals that are different from the goal of any one individual. Once any one of these theories of goal formation is accepted, the problem of communicating and obtaining commitment to the goals by other organization members become paramount. This is especially true if one accepts the theoretical notion that goal formation is a pervasive ongoing organization process; and that the management strategy of formalizing the goal setting process will enhance organization effectiveness and efficiency by making organization goals explicit, as was previously discussed.

Origination of MBO

Even though goal directed activity can be considered, almost by definition, an integral part of an organization existence, it was not until Peter F. Drucker (1954) coined the term "Management By Objectives" (MBO) that theorists started to focus upon goal setting as an explicit approach to

management. Drucker envisioned a results orientation to management as opposed to the previous concern with how managers accomplished their jobs. At about the same time, Schleh (1953, 1954) was also advocating a results orientation to management and proposed that these results be used to determine executive merit ratings. McGregor (1957) added substantially to this idea of a results-based management strategy when he operationalized it as a basis for appraising managerial performance. Since these first writings, a voluminous literature has expanded this notion of results oriented management.* MBO has since been developed into a process which, not only specifies in considerable detail how goals will be set at an individual level, but how organizational goals are established, how individual goals are linked to organizational goals, how the individual develops a plan for implementation and finally how the results are measured and are used as feedback in the formation of new goals.

Conventional Management

In attempting to define the MBO process it is helpful to look first at what can be termed the conventional approach to management. This approach focuses in on the key functions and activities of management. Weber's bureaucratic model and

*There are many common labels applied to fairly similar processes; i.e., management by objectives, management by results, goals management, work planning and review, and goals and controls. Because management by objectives is most widely used, and to maintain consistency this term will be used throughout this discussion.

Taylor's one best method was designed to help managers structure organizations to improve the efficiency. The way managers performed their jobs was the major interest. Charts of organization heirarchy, the span of control, job descriptions, staff and line relationships and balancing authority and responsibility were the concepts which became the center of management discussions.

Also, central to this discussion were the activities actually performed by the executive. Mooney and Reiley (1931), Fayol (1949), Davis (1952) and others attempted to categorize executive activities to enhance effectiveness. Typically then, management development training efforts focused on what successful managers did, i.e., planning, organizing, staffing and controlling. Consistent with these notions, managerial performance was evaluated based on how managers performed their jobs and what behaviors they exhibited.

The MBO Approach

The problem with prescribing detailed work roles and sets of activities to managers quickly became apparent. These problems have been discussed in detail in many MBO articles and books under the implicit or explicit assumption that conventional management should be replaced by MBO. However, this investigator does not believe that conventional mangement is necessarily inconsistent with MBO. The development of a clear and distinct chain of responsibilities and authority does make

a major contribution to the fulfillment of managerial responsibilities and provides for coordination between different parts of the organization. Furthermore, the way managers behave does influence how effectively and efficiently they perform. Thus, MBO is not in any way proposed as an alternative to the good organization practices of a conventional management approach but represents a shift in orientation toward results, as will be discussed. MBO may be said to be a way of managing the job.

MBO is characterized as a results oriented managerial approach. Because MBO programs in use may vary considerably in nature and scope, Wikstrom (1968) and Kirchoff(1974) have concluded that MBO has become an all purpose term with little meaning. This writer is not convinced of the accuracy of their assertions. Having read most of the MBO literature, it is evident that there is a design consistency among the programs and that most cited differences are merely semantic.

With the express purpose of clarifying much of the confusion surrounding MBO, McConkie (1979) examined the works of authors judged to be MBO experts or authorities. He found nearly universal agreement that goals and objectives should be specific, that they should be defined in terms of measurable results, and that individual and organizational goals should be linked, one to another. Table 1 summarizes these common elements and indicates that there is substantial agreement among theorists on what constitutes an MBO program.

TABLE 1
THE GOAL-SETTING PROCESS AS SEEN BY
LEADING AUTHORITIES*

	Total Number of Responses	Percentage of Authori- ties in Agreement
1. Goals and objectives should be specific.	37	97%
2. Goals and Objectives should be defined in terms of measurable results.	37	97%
3. Individual goals should be linked in terms of measurable results.	37	97%
4. Subordinates should participate in the goal setting process.	35	92%
5. Objective criteria and performance standards must be clearly included in MBO.	33**	87%
6. Objectives should be reviewed periodically.	31	82%
7. The time period for goal accomplishment should be specific.	27	71%
8. Whenever possible, the indicator of the results should be quantifiable; other wise, it should be a least verifiable.	26	68%

*This table is taken from McConkie (1979). Based on publication criteria he selected 39 authorities to examine the MBO construct.

**McConkie (1979) noted that the others did not mention objective criteria but appear to assume it to be part of MBO.

	Total Number of Responses	Percentage of Authori- ties in Agreement
9. Objectives should be flexi- ble; changed as conditions warrant.	26	68%
10. Objectives should include a plan of action for accom- plishing the results.	21	55%
11. Objectives should be assigned priorities or weights.	19	50%

As is evident from this table differences are in the omission of a particular element rather than disagreement about what should be included. Thus, McConkie (1979) provides considerable support to the notion that MBO is a process that has been conceptualized quite consistently.

Why then do Wikstrom (1968) and Kirchoff (1974) contend that the MBO construct lack uniformity and consistency? This investigator would argue that their conclusions were based on MBO programs in operation rather than the examination of what theorists say should be included in an MBO program. Needless to say, there are going to be observed differences in MBO programs which are instituted by a one or two day management seminars, as opposed to a program which incorporates training with systematic involvement of MBO in other organizational processes; i.e., budgeting, merit increases, work planning, etc. As a result, the definition of what will be the dependent variable in this research will be the normative description or definition of the MBO process. The reader must examine the MBO treatment described in the methods section to determine how closely it approximates that model. The assumption here is that one does not have MBO, one simply approaches the construct.

MBO Goal Setting

MBO can be characterized as a goal setting process and as a program instituted organization-wide. The focus of the goal setting process is on superior and subordinate relationships.

Odiorne (1965) described it as:

...a process whereby the superior and subordinate members of an organization jointly identify its common goals; define each individual's major areas of responsibility in terms of the results expected of him, and use these measures as guides for operating the unit and assessing the contribution of each of its members. (p. 55-56).

Inherent in Odiorne's (1965) definition is that goal setting occurs between a superior and his/her subordinate, goals are plans of action to help the individual discharge his/her responsibilities, and criteria are constructed "a priori" so individuals can monitor the administration of their duties and others can evaluate their performance. The basic assumption of the goal setting process is that individual performances will be increased by providing an individual with clear targets toward which to direct his energies (Barrett, 1970; Drucker, 1954; and McConkie, 1976).

Locke (1968) stimulated considerable research on the impact of goal setting on performance. This research, utilizing factor -- analytical techniques, has identified specific attributes of the goal setting process which have a differential effect on individual performance. Comprehensive reviews of both field and laboratory research by Steers and Porter (1974) and Latham and Yukl (1975) provide substantial evidence that goal specificity, acceptance of goals, goal difficulty, participation in goal setting and feedback on goal efforts influence individual performance. Participation in goal setting has not been shown to enhance goal commitment more than assigned goals but participation has been shown to

be conducive to establishing goals at a level that will provide a challenge. These findings are consistent with the elements of the goal setting process identified by McConkie's (1979) authorities, whose work is summarized in Table 1.

Normatively then, the goal setting process should include the following:

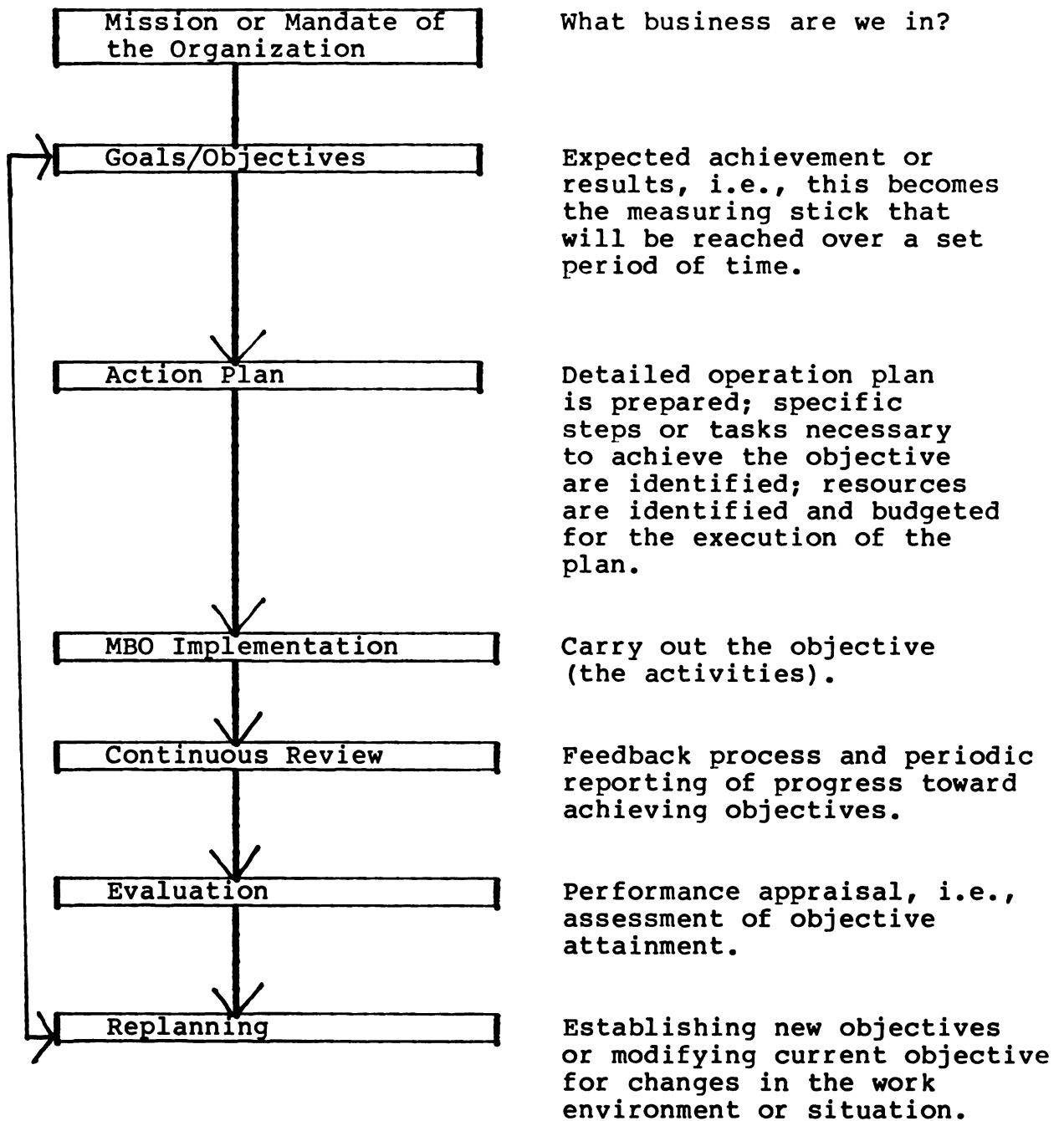
1. Interaction between the superior and subordinate; preferably with the subordinate making a major contribution (Participation).
2. Goals should establish specific results and the time period for accomplishment should be designated.
3. Measurable performance indicators should be identified or constructed, and future evaluation of those results should occur.
4. Based upon the performance toward these goals and changes in the environment, goal setting should remain flexible and be adjusted as needed.

MBO System

The methods of instituting MBO organization-wide are also very similar when one examines the MBO literature (Raia, 1974; Batten, 1965; Beck and Hillmar, 1976; Carroll and Tosi, 1973; and McConkie, 1976). Figure 1 illustrates the MBO process outlined in most commonly used programs.

In the first step of this process the chief Executive Officer (CEO) and/or the top management team develops a set of mandates/mission statements for the organization. These

Figure 1
MBO PROCESS



describe the realities of the organization's environment and what must occur if the organization is to continue to exist and/or continue to grow. To establish the mission statement, careful consideration is given to the factors which determine what kind of business the organization is in (i.e., technology, market place, physical, human or financial resources, productivity, innovation, profits and impact on society). Raia (1974) outlines some of the fundamental questions which must be answered if a clear sense of the basic mission is to be developed.

"Why does the organization exist?"

"What is the present scope of the enterprise?"

"What is its potential?"

This process is somewhat akin to the psychological development in people of an identity or a unique reason for being.

Based on this information mission statements are written which identify "key result areas" vital to the success of the organization. This statement of organization purpose is particularly important because it provides the base for formulating long range strategic plans and the goals assigned to each organization member throughout the company. Most MBO programs operationalize the mission statements by giving goal responsibility to the appropriate person. Although the organization is broken down into functional units, the basic responsibilities must be assigned to specific individuals whether they are to manage a particular department or perform technical work within that department. Thus, the job responsibilities of a person have a major influence on both scope

and content of the goals established for that position.

As was discussed previously, the actual goal or objective setting process is negotiated in a face-to-face interaction between superior and subordinate. From the top levels of the organization this process cascades downward through every level of the organization until each member has a set of quantifiable goals, which contribute to the accomplishment of the broader goals of the next higher level of management.

Having established a written statement of goals for a particular period of time, a plan for achieving those goals is developed. The amount of detail incorporated in this action planning statement depends on abilities of the person undertaking the task and the total scope of the objective. For instance, it makes sense to develop a plan for major long-term projects which are going to involve a number of people. During goal implementation, a continuous feedback process is designed to enable each person to control his/her own efforts.

Finally, an assessment of goal attainment is made periodically and these data are used to evaluate the performance of each organization member and establish new goals and perhaps reassign job responsibilities.

This briefly outlines a fairly standardized MBO process. These plans are usually in considerably more detailed than presented here. In fact, managers often receive special training in writing objectives, conducting goal setting interviews, giving feedback, and developing procedures for measuring results. In addition, these approaches may become

part of the organization's written policy. A supervisor may be required to submit a copy of objectives for his work unit and then formally assess individual achievement against those objectives. Then, to insure that employees/management utilize an MBO approach most theorists and consultants suggest that MBO be linked to other organization processes (Jackson and Mathis, 1972; Owen, 1974; McConkie, 1979; Carroll and Tosi, 1973; and Raia, 1974). These include:

1. Organizational planning and budgeting;
2. Performance appraisal;
3. Determination of merit pay increase;
4. Career and manpower planning;
5. Developing selection and placement criteria;
6. Specifying job responsibilities;
7. Managerial decision making processes;
8. Project management; and,
9. Assessing management development and training needs.

Use of MBO

Thus, the extent to which MBO is being utilized in an organization can be determined by two sets of criteria as have been outlined. The first set of criteria is concerned with the quality and extent of goal setting that occurs in the superior-subordinate relationships. The extent can be determined by finding out if superior-subordinate goal setting are occurring, if the frequency of goal setting seems adequate, and if the goals are being set for major elements of the

the employee's work. The quality aspects of goal setting can be evaluated by considering what constitutes a properly set goal-objective. For instance, are goals/objectives in writing, are performance measures identified, are priorities assigned, and does the subordinate participate in the process? The qualitative aspects specified by McConkie's (1979) authorities provide a fairly specific set of criteria which can be used to make this evaluation.

The second set of criteria focuses on the MBO program as a total organization-wide system. The basic MBO system outlined previously provides a standard against which the MBO program can be evaluated. For example, one would determine the extent to which mission statements have been developed for the organization and to what degree those mission statements have been communicated to employees. Then one would examine each of the other aspects of the model and make an assessment of the extent to which the MBO system has been incorporated into the management process.

This definition of the MBO process represents what could be termed an ideal model. It was constructed from what goal setting theorists, MBO writers and MBO consultants specified as elements of a properly designed MBO system.

However, one cannot deny that Kirchoff (1974) and Wikstrom (1968) are correct in the assessment of the variation of MBO programs that are actually in existence. As a result, it would make more sense to determine how closely an existing program approaches the MBO ideal rather than to make a

[illegible]

judgment as to whether the organization has MBO or not. Furthermore, this would avoid comparing non-MBO organizations to those who "received" MBO. It is a serious mistake to assume that organizations which have not experienced an MBO program do not utilize goal directed behavior. One only need be reminded that MBO is a practical system of management which had its origin in observations of practicing managers.

MBO as an Independent Variable

MBO has been treated primarily as an independent variable. In fact, the rationale for such a formal goal setting mechanism as opposed to a natural/evolved state of affairs is seldom overlooked in the extensive "how to" literature (Carroll and Tosi, 1973; Beck and Hillmar, 1976; McConkie, 1975; and Batten, 1965).

These books often devote at least the first chapter to the benefits of MBO in general and to their method in particular. Furthermore, the majority of articles written about MBO installations resemble testimonials at a revival meeting because of the ringing endorsements made to the concept. The following are some of the commonly given reasons for establishing a MBO program:

1. It clarifies the mission (mandate) for organization members. This helps employees identify where they should focus their efforts and how their efforts contribute to the organizational success.

2. It enhances commitment to the organization by integrating individual and organizational goals.

3. Participation in the goal setting process is considered a key element of most MBO programs. Subordinates are believed to set higher goals when they are involved (Carroll, 1975, p. 1-15). People are expected to exert more effort and act more responsibly when they have helped to set their own goals.

4. Goal setting provides a quantifiable standard against which managerial performance can be measured. Furthermore, people will feel a sense of equity if organizational rewards are distributed based on goal achievement.

5. Job satisfaction is believed to be enhanced because of the involvement in planning one's work and because of the feeling of accomplishment realized in reaching one's goals.

6. Goal setting clarifies the direction of efforts, and obstacles can be identified and removed or taken into account in planning.

7. It is less difficult to manage subordinates if a formal goal setting process is used. Not only are subordinates more motivated to perform but they also have more information for self-direction and control of their own efforts. The manager can become less involved in the "how" and focus more on "what" needs to be done. Furthermore, problems are more easily identified and the manager can become involved sooner if trouble occurs. It facilitates management by exception at each managerial level.

8. Superiors will have a better understanding of and be more responsive to the work of their subordinates.

9. It forces managers to more carefully plan how they use their resources (Raia, 1965, p. 46-47).

10. It is a common language for employees and provides a foundation for effective communications. The personal face-to-face relationships of goal setting and appraisal meetings improve communication and foster mutual understanding.

Although most of the writers who propose the aforementioned advantages have typically not been involved in rigorous MBO research, their views should not be disregarded. Most of these writers have had considerable organizational experience and have seen first hand how organizations responded to formalized results -- oriented management.

The empirical research also generally supports the notion that MBO has a positive influence on organizational effectiveness and employee attitudes. This research has been briefly summarized in Table 2. Unfortunately, with most of this research causality cannot be determined because inadequate research designs preclude most analytical methods other than correlational analysis. This problem is often a function of research limitations presented by the field location, i.e., data collected at one point in time, no control group, etc. Furthermore, because of the heavy consulting emphasis, these investigators have limited research skills and operationalize a unique MBO program for a single organization. In addition, as can be noted from Table 2, performance under an MBO system is frequently measured by self-report questionnaires when the program has been recently implemented.

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TABLE 2

Empirical Research on the Effects of MBO

Investigator	Data Collected	Sample (N)	Findings
Raia (1965, 1966)	Interviews Questionnaires Productivity (over 3 years) locations	Managers (10) Managers and Supervisors 15 plant MBO program.	Increase in goal levels (3%), productivity (18%), goal attainment (2%) and awareness of company objectives were the result of installation of an
Burke and Wilcox (1969)	Questionnaire	Female Telephone operators	Mutual setting of specific goals to be achieved by the subordinate in the near future was related to the success of the performance appraisal interview.
Ivancevich (1969, 1972)	Questionnaire (Measure 4 points in time)	Managers (166)	Increase job satisfaction for those persons involved in MBO between time 1 and 2; however, this effect disappeared by time 4.
Carroll and Tosi (1970)	Questionnaire (2 points in time)	Managers (150)	Utilizing correlational analysis increased goal clarity and satisfaction with one's supervisor were found to improve with MBO for certain types of managers. However, utilizing cross-lagged analysis MBO could not be linked causally with these improvements.
Bonan, Latham, and Kirne (1973)	Productivity and injuries	Pulpwood producers (1884)	Goal setting was correlated with high performance and low number of injuries when accompanied by close supervision.

TABLE 2
Empirical Research on the Effectiveness of MBO (cont.)

Investigator	Data Collected	Sample (N)	Findings
Ivancevich (1974)	Productivity (over 3 years)	Supervisors (181)	Improvements in productivity in two plants which implemented MBO. Where there was a commitment from top management, it was maintained over 3 year period.
Shetty and Carlisle (1974)	Questionnaire	Professors (109)	Installation of MBO resulted in better understanding of goals; improved planning; better data for performance appraisal; improved performance; and communications.
Steers (1975)	Questionnaire (performance measured obtained from supervisors)	Supervisors (133)	Goal specificity and feedback on goal effort were significantly related to performance for high need achiever. Goal difficulty and peer competition was not related to performance.
Latham and Yukl (1975)	Performance data	Loggers (480)	Loggers who had goals out performed those who were told to do their best.

However, given the limitation of the empirical research and the fact that writers expounding the benefits of MBO often have some financial reason for doing so, the evidence seems to point to the following conclusions.

1. MBO leads to improved performance and productivity.
2. The MBO process increases job satisfaction for those involved in the process, at least initially.
3. MBO seems to facilitate planning, communications, performance appraisal interviews. Furthermore, it is conducive for more effective superior-subordinate relationships.

Although more research on the effects of MBO is needed, this investigator is willing to assume that MBO indeed has a positive effect on organizational effectiveness and employee attitudes. As a result, this research will focus on the problems of instituting MBO with an organization.

MBO as a Dependent Variable

The positive results attributed to MBO have certainly not been ignored by industry, according to a survey conducted by Schuster and Kindall (1974). They found that almost half of the 500 largest United States industrial corporations have made attempts to utilize MBO in some fashion. However, upon asking more specific questions, Schuster and Kindall (1974) found that, although the term MBO was freely used in these organizations, many did not have a real MBO program in use. Furthermore, half of the respondents had encountered serious

difficulties and problems with their MBO programs (i.e., lack of understanding by managers and/or employees; and failure to follow up and periodically evaluate accomplishment of goals), and thus, indicated only moderate or passive support for MBO. Finally, only ten organizations (8.3%) who claimed to have on going MBO programs evaluated their MBO program as being highly successful. This low proportion of success is certainly not what one would expect from reading the journal articles and books about MBO. Schuster and Kindall (1974) concluded that:

"In all, it seems that the extent of application and the success of some highly publicized MBO programs have perhaps been overstated in the literature." (p. 10).

In an attempt to find out why there was such a gap between MBO theory and practice, Schuster and Kindall (1974) examined six selected companies in detail. The primary reason they found for this gap was attributed to the incompatibility of management climate and the intent and philosophy of MBO. However, this finding is certainly not new. The significance of the organizational climate to MBO success has been recognized by a number of writers. As early as 1960, McGregor realized that MBO process could be facilitated by creating internal organization conditions that were consistent with the values and assumptions inherent in MBO. Jamieson (1966) and McConkie (1972) are a few of the writers who see organizational climate as a critical variable in the successful implementation of MBO. What constitutes an organizational climate

supportive to MBO is articulated by Owen (1974).

"Indeed, a substantial degree of teamspirit and mutual supportiveness within an organization is a condition and pre-requisite for the success of most MBO programs. MBO, as such, cannot create team spirit. But, if management can create a climate and internal atmosphere of openness, honest communications, participativeness, trust, mutual help and cooperation, then MBO, as a total and permeating program, can function as a dynamic force in the organization." (p. 15).

In fact, not only does Owen (1974) see the supportive climate as essential but that this climate must be established prior to the MBO installation. Jamieson (1974) also makes this point:

"If, however, the organization is characterized by authoritarian management, highly centralized decision making and simplistic motivational assumptions, then MBO is unlikely to succeed until the climate has been modified." (p. 498).

Patten (1972) not only recognized how critical organization climate was to implementation of a MBO program, he proposed that organization development be a necessary first step to overcome social-emotional blockages before one attempts to install an MBO program. Since Patten (1972) made this observation, utilization of organization development techniques to build supportive organization climate have been incorporated in the more recent MBO books and in the strategies of some MBO consultants; i.e., Raia (1974); Carroll and Tosi (1973); Beck and Hillmar (1976).

However, to date, with only one notable exception, no empirical evidence has appeared to support the notion that a supportive organization climate is instrumental to the success of an MBO effort. This glaring hole is pointed out in some

detail by Hollmann (1976) in justification for his research. He designed a correlational study which compared managers' perceptions of their organization climate with their assessment of the effectiveness of a previously installed MBO program, and indeed found a significant positive relationship with what he termed a supportive climate. Hollmann operationally defined it as a climate, "...characterized by high levels of trust and confidence between superiors and subordinates, multidirectional rather than just vertical communication, cooperative teamwork among work group members, a reasonable degree of subordinate involvement in decision making and general goal setting, and an emphasis on self-control rather than superior-imposed control." Specifically, climate supportiveness was measured in terms of six internal organizational processes drawn from Likert's measures of leadership, communication, decision making, goal setting, interaction-influence and control (Likert, 1961, p. 562).

In addition to acknowledging the need for replication, Hollmann (1976) pointed out that both the supportiveness of the climate and the manager's assessment of MBO were measured by self reported perceptual data; and the climate scores were not corroborated by independent observations nor were MBO effectiveness measures supplemented by objective measures of performance. Furthermore, climate was not controlled by the experimenter but allowed to vary naturally. Although this study cannot prove cause and effect, it represents an important first attempt at providing some empirical support for this

relationship.

Accordingly, it is logical to assume that organization climate influences the utilization of MBO. Furthermore, organizational climate research has become quite popular in organizational and industrial psychology. Whatever the conceptual and operational definitions of climate happen to be, measurement techniques and findings are diverse and even contradictory. For example, James and Jones (1974) reviewed this literature and concluded that a definitive conceptual statement about the nature of organization climate is not possible at the current stage of research. Researchers have not been able to determine or even agree on the specific variables, dimensions and constructs to be included in the organizational climate domain. Perhaps more importantly, theorists and researchers have been unable to obtain consensus on the way such dimensions supercede or differ from other variables, dimensions, and constructs previously used to study interpersonal relations in the organization. Thus, for two basic reasons this researcher has chosen to use interpersonal trust as opposed to an organizational climate construct. First, because of the basic problems that theorists have had defining and measuring organizational climate. Second, and more importantly, because interpersonal trust represents a construct more basic to the MBO process. Trust, then, will be the element of the organizational climate and/or environment that is proposed as instrumental to the installation of MBO.

Trust

Introduction

The concept of trust, like that of motivation, does not take physical form but is a construct to which theorists attribute individual behavior. Some 20 years ago Deutsch (1958) noted the pervasiveness and significance of trust and suspicion in human interaction. Since this observation was made, considerable thought has been given to this construct and numerous studies have been conducted. It has been found that high levels of trust are linked with efficient work group functioning, long-term organizational effectiveness, belief in political figures, the willingness of people to make adaptations to environmental change, and effective responses to performance ratings. By the same token, the development of mistrust will make people hesitant to cooperate, communications will be distorted and physical conflict will be much more probable. However, these research efforts have been diffused across the entire breadth of the social sciences. One finds trust treated as a core concept in education, psychology, industrial relations, organization development, political science and counseling. As one would expect, there has been some disagreement between these diverse disciplines of what constitute trust and how it should be measured; but theoretically and empirically they agree that trust has substantial influence on interpersonal relationships.

Because there have been substantial and diverse interests in trust, this discussion is certainly not intended to provide a complete review of the literature. Rather, the goal is to verify trust as a meaningful variable in the context of the organization. To do so, this investigator will examine the construct properties in terms of the following issues:

1. definition
2. measurement
3. validity
4. construct stability
5. manipulation of the variable
6. effects on human behavior

Once trust has received this general review, the specific theoretical and empirical aspects of the trust-MBO relationship will be treated in detail in Chapter 2.

Definition of Trust

In this writing, trust is defined in terms of an attitude, a behavior and a given situation. Trust is a psychological predisposition that a person holds regarding the way or manner in which some other individual or group of individuals (termed other) will behave. This predisposition concerns the degree to which a "person" believes he/she can predict how the "other" will behave; and the perceived intent or motivation that the "other" brings to the situation. A "person's" attitude toward an "other" is translated into behavior when the "person" makes a decision to cooperate in an uncertain

situation where cooperation increases his/her vulnerability to the "other." The situation is uncertain when "person" does not control "other's" behavior and "other" will determine if "person" receives a desirable outcome or suffers because "other" abuses his vulnerability.

This definition can be further clarified by discussing trust in terms of a 2 by 2 matrix as represented in Figure 2.

Figure 2
COMPONENTS OF TRUST
PREDICTABILITY

	High	Low
Positive	Trust (1)	Mistrust (2)
Negative	Mistrust (3)	Mistrust (4)

First, for trust or mistrust to be evident, the situation must be perceived such that "person" can obtain certain desirable outcomes by cooperating with "other" but at the same time be subject to the risk of some undesirable consequences if "other" takes advantage of "person's" cooperative behavior. Second, based on past experience with "other", a similar situation and/or a generalized attitude about people, "person" will have a preconceived notion about how "other" will behave in the cooperative situation. "Person" will trust "other" only if he believes that other will behave predictably and in "person's" best interest (cell 1). However, "person" will mistrust "other" under the conditions illustrated by cell 2,

cell 3 and cell 4. In cell 2 and cell 4 lack of predictability would engender mistrust because "person" would not be able to rely on the future behavior of "other." In fact, situations where predictability is low and intent is negative (cell 4) could result in high anxiety levels because the person is subject to unpredictable punishment. Fear would probably be the emotional response to this situation. On the other hand, in cell 3 "other" is predictable but is perceived as not acting in "person's" best interest. Rotter (1971) would deem this later condition trust. "Other" would be trusted to behave in such a way that would abuse the vulnerability of "person." However, this is not the trust within this definition because cooperative behavior is included in the construct. In other words, "person" would not behave in a trusting manner by cooperating and increasing his vulnerability because he would expect to suffer because "other" would take advantage of him.

Because the trust literature was carefully reviewed prior to constructing this definition, it is consistent with other widely used definitions of trust. Deutsch's (1962) definition of trust is probably the most widely used:

The essential features of a situation confronting the individual with a choice to trust or not in the behavior of another person are, in my view: (a) the individual is confronted with an ambiguous path, a path that can lead to an event perceived to be beneficial (Va+) or to an event perceived to be harmful (Va-); (b) he perceived that the occurrence of Va+ or Va- is contingent upon the behavior of another person; and (c) he perceives the strength of Va- to be greater than the strength of Va+.

If he chooses to take an ambiguous path with such properties, I shall say that he makes a trusting choice; if he chooses not to take the path, he makes a distrustful choice." (p. 303).

Griffin's (1967) trust definition is more succinct but essentially the same.

It is the reliance upon the characteristics of an object, or the occurrence of an event, or the behavior of a person in order to achieve a desired but uncertain objective in a risky situation. (p. 105).

Trust, then, can be characterized as a positive unifying force from which cooperation is derived. Whereas, mistrust is characterized as the unwillingness of individuals to take cooperative action which increases their vulnerability. Thus, individuals who are mistrustful are reluctant to sacrifice their opinions, ideas and efforts because of perceived possible negative outcomes.

To illustrate the dynamics of trust one only need imagine a professor's decision to coauthor a book with another faculty member. The professor must first determine that writing a book would have desirable kinds of professional and/or personal outcomes, and that he does not want and/or is not capable of writing the book on his own. The commitment to cooperate with another faculty member will be contingent upon the professor's perceptions of the reliability and intent of this other faculty member. First, the professor must feel assured that the other faculty member will indeed uphold his end of the bargain and produce his chapters in a timely fashion (predictable). Second, the professor must perceive

that the other faculty member will act in his best interests (positive intent). In other words, the professor would be reluctant to trust someone who might steal his ideas and publish them alone. Finally the situation is going to affect how much trust the professor must place in the other faculty member. A situation is certainly going to demand less trust if the professor believes he can still finish the book if the other faculty member abuses his trust than if he believes the book will not be published without the cooperative efforts of the other faculty member.

Behavioral Measures of Trust

Once a concept has been defined and theoretical statements made about its relationship to other variables, measurement becomes the next basic concern. Trust measures can be placed in two major categories, i.e., behavioral and perceptual. For instance, one researcher operationalized trust as the act of drivers locking their car doors while attending church (TeVault, et al, 1971). Other researchers have utilized the time elapsed between an order given by the researcher and the subject carrying out the command, i.e., willingness to fall backwards in the arms of another person who promises to catch them and turning a brass knob that has previously shocked the researcher (Geller, 1967; and Schutz, 1967). However, the more widely used behavioral measure of trust is the cooperative behavior exhibited in a mixed motive game (MMG). The most popular MMG, in trust research, is the Prisoner's Dilemma

game developed by Luce and Raiffa (1957). In this game subjects are asked to participate in a role play situation in which they are one of two persons arrested on suspicion of a certain crime but without adequate evidence to convict them. The district attorney tries to get that evidence by separating the two prisoners and trying to induce one to confess. The game is mixed motive in that outcomes (usually game points or small amounts of money) are contingent upon the cooperative behavior of both participants (prisoners). Typically, if one does not withhold evidence, he wins and the other loses; if both give evidence, both lose and if both do not give evidence, then both win. The maximum strategy for both players, then is not to give evidence. Utilizing this game, researchers are able to manipulate what they believe to be antecedent conditions to trust and observe the resulting behavior.

Kee and Knox (1970) have summarized the basic limitations of the MMG game research. First MMG must be recognized as contrived because such a uniform situation with a limited number of alternative behaviors is almost non-existent in the real world. Furthermore, the payoffs and incentives that are utilized in MMG are game points or small amounts of money as opposed to the meaningful stakes present in real world situations. Finally, trust is treated as a choice between two alternatives whereas trust is conceptualized as a continuous variable. Kee and Knox (1970) concluded;

It would appear that if the Prisoner dilemma game or some other non-zero-sum game is to be

in the study of trust and suspicion, it should involve sequential choices with meaningful incentives at stake, and should either itself provide, or be supplemented with, a continuous measure of the underlying subjective state. (p. 365).

These criticisms would seem appropriate for most other behaviorally measured trust research because the designs that are used are quite similar to the prisoner's dilemma game.

Perceptual Measures of Trust

The alternative to using a behavioral observations approach is to assess individual perception of trust. This type of measure is most often used in field research. In fact, Kegan and Rubinstein (1972), upon reviewing some 90 measures of trust both perceptual and behavioral, concluded that there were 13 perceptual measures of trust which were appropriate for industrial subjects. These perceptual measures of trust typically lend themselves to a Likert-type question format. The items are treated as additive and delineate specific social beings who are the objects of trust, i.e., teachers, parents, politicians, work groups, etc. These instruments are designed to reflect whether trust is considered a generalized trait or whether it is situationally determined.

Rotter (1967) has constructed a scale which measures trust as a generalized trait. This means that the objects of trust are selected from a broad range of significant others (i.e., teachers, parents, politicians, etc.) and are not specific persons involved in a particular trust situation. This

questionnaire, designated the interpersonal trust scale (ITS), consists of 25 trust items and 15 filler items designed to disguise the purpose of the questionnaire. Among college students, the scale has an internal consistency of .76 and retest reliabilities of .69, .68 and .56 at 5 weeks, 3 months and 7 months, respectively. In addition, researchers have explored the validity of this trust scale. ITS trust assessment was found to be positively and significantly related to the way in which others would rate the trust levels of the same persons. In this research ITS was a significantly better predictor than popularity, friendship and humor. Furthermore, this measure of trust was not positively associated with gullibility and dependency, and thus, discriminant validity was demonstrated by Rotter (1967). Geller (1968), Katz and Rotter (1969) and Hamsher (1969) have also found that the ITS measures of trust were valid, in that they could predict at a significant level, differences in trust in a laboratory situation. An example of this research was finding that the ITS trust measure was related to the belief that the Warren Commission (which investigated the assassination of President J. F. Kennedy) knew there was a conspiracy and was covering it up (Hamsher, Geller and Rotter, 1968).

Based on this research, it may be concluded that perceptions of trust can, indeed, be measured and that such measurements will provide results consistent with other indicators of trust. These findings also indicate that trust is perceived as independent from other concepts which may be related.

However, this is not to say that ITS is the one best measure of trust. Tiller (1971), Hoerl (1972) and MacDonald (1972), failed to find a relationship between the ITS and the Prisoner Dilemma game (PDG). These researchers concluded that two measures of trust are measuring different constructs. Furthermore, Kaplan (1973) and Chun and Campbell (1974) identified multiple dimensions within the ITS not directly related to trust in content. Finally, Beattie (1972) and Kessel (1971) concluded that measures of trust in terms of specific referents are better predictors of behavior than generalized trust.

Whereas Rotter (1967) developed the ITS from the theoretical literature, some theorists have identified trust scales in their questionnaires only after they began to analyze their data. Friedlander (1966) developed a group behavior inventory questionnaire and after factor analysis of his items, isolated a set of questions that he felt focused upon interpersonal trust. These items, however, referred only to a specific situation and a particular group of individuals, and, thus, were not a measure of generalized trust, but were identified as a situational trust measure. Although this was a post hoc way of scale development, it indicates that items concerning trust will cluster and be sufficiently reliable to be considered a scale (.73). These items did not load on other dimensions found in his group behavior inventory questionnaire, i.e., group effectiveness, approach versus withdrawal from leader, mutual influence, personal involvement, general

evolution of group meetings, submission versus rebellion against leader, leader control or role and idea conformity. There was also a test-retest reliability of .68 over a time interval of approximately six months.

Stability Issues

As indicated by Friedlander's (1966) in assessing test-retest reliability, the trust tends to be a stable variable. In fact, theorists who have attempted to influence trust with counseling and laboratory training have been, for the most part, unsuccessful (Strong and Schmidt, 1970; Friedlander, 1966; and Ollerman, 1975). These researchers attributed the resistance of trust levels to change to inadequate change treatments. Kegan (1971) is a notable exception. He reported a significant increase in trust when laboratory training was "properly" designed. Unfortunately, he was quite vague as to what constituted a "proper" design. Basically, the only distinction was that the organization had to make substantial commitments to organizational developmental goals rather than simply holding isolated "sensitivity training" sessions.

Trust as the Dependent Variable

Theoretical statements and empirical evidence that trust is related to other variables provides verification that this construct exists. There are two basic theories extant on how individuals develop trust. The first, popular with clinical psychologists such as Freud and Erickson, links trust to early childhood experiences. They contend that trust is an

important element of personality development and it becomes a stable disposition which is quite difficult to change. Under this generalized trust model, an individual would be led to expect similar levels of trustworthiness in all people. Identical situations would be perceived differently by persons having different life experiences.

Whereas situational trust theory attempts to explain trust predispositions based on social learning theory. This theory posits that one's choice to exhibit trusting behavior is based on a more immediate reinforcement history and on the situation in which the trusting (cooperative) behavior is demanded. Although social learning theory recognizes that people may establish initial trust levels from childhood experiences, these expectancies are modified by more recent actual or observed experiences.

Based on the generalized trust paradigm Rotter (1967) developed ITS as previously mentioned and Wrightsman (1964) developed a similar type* of instrument which he called the Philosophies of Human Nature Scale (PHN). Research has shown the instruments to be highly correlated, i.e., .62 and .76 which indicates they measure the same underlying construct (O'Connor, 1970; Chun and Campbell, 1974). Researchers utilizing these scales have found empirical evidence to support the notion that there is a generalized trust. Research has found that different trust levels exist between men and women (Rotter, 1967; Sawyer et al., 1973; Robert, 1972, and Wrightsman, 1974), between blacks and whites (Switken and

Gyther, 1974; and Wrightsman, 1974), between students from more affluent and less affluent families (Rotter, 1967), and between fathers and sons (Katz and Rotter, 1969). However, when generalized trust measures are compared to trust measures which make specific references to the trust situation, the former are found to be a weaker predictor of behavior (Beattie, 1972; Kessel, 1971; and Schlenker, et al., 1973).

Although generalized trust theory is probably accurate in associating personality development with a certain degree of influence on the trust predisposition, situational trust is more appropriate for this empirical investigation. First because situational trust seems to be the best predictor of trusting behavior, and second, because the measure of situational trust refer to specific social objects in a particular situation, but do not exclude trust perceptions developed in childhood. Under this theoretical paradigm generalized trust forms only the basis for perceptions of individual trust situations.

Considerable research has been done on the situational factors determine trust predisposition and the willingness to cooperate. These factors can be grouped into five categories. First the actual or perceived experience that "person has had with 'other'" influences trust. Solomon (1960), Schlenker et al., (1973), Rotter et al., (1977), Swinth (1967), and Gahagan and Tedeschi (1968) found that credibility of "other", that is the frequency of which "other" actually fulfilled his promises, influenced the willingness of person to trust other.

However, Rotter (1971) points out that situational trust is contingent upon previous experience.

The relative importance of the specific expectancy is a function of the degree of experience in that specific situation, or conversely, the importance of generalized expectancy is a function of the degree of novelty, ambiguity, or unstructuredness of a particular situation. The more novel the situation, the greater weight generalized expectancies have. (p. 445).

Second, based on his lifelong involvement in trust research, Gibb (1973) maintains that open and honest communication is central to a high trust environment. This contention is supported by MMG research in that communications consistently induce cooperative behavior (Swinth, 1967; Deutsch, 1958, 1960; Loomis, 1959; Pilisuk and Skomick, 1968).

Some of the situational characteristics which may facilitate the development of trust appear to be the following: a) the opportunity for each person to know what the other will do before he commits himself irreversibly to a trusting choice. b) The opportunity and ability to communicate fully a system for cooperation which defines mutual responsibility(Deutsch, 1958, p. 279).

However, Deutsch (1960) concluded after additional experimentation that:

The mere existence of channels of communication is no guarantee that communication will indeed take place; and the greater the competitive orientation of the parties vis a vis each other, the less likely will they be to use such channels as do exist." (p. 125).

Where barriers to communication exist, a situation in which the parties are compelled to communicate will be more effective than one in which the choice to talk or not is put voluntary basis. (p. 126).

Unfortunately, other than in MMG research, communications are

seldom examined as an independent variable. More frequently, trust is the independent variable and investigators examined its influence on the frequency and content of communications. A notable exception is Johnson and Noonan's (1972) research on the development of trust in counseling relationships. These investigators found that counselors are rated as more trustworthy when the counselor reciprocates the participant's self-disclosures than when he does not.

Third, the risk to "person" in the trust situation is a major influence on "persons" willingness to trust "other." For instance, "persons" decision to invest a substantial amount of money in "others" new invention would demand substantially more trust if the money were his life savings and/or a loan on his home than if the same amount of money had been set aside for investment purposes. Although empirical research has not specifically been done on risk and trust, researchers have examined situational factors which minimize risk. "Person" is more likely to expect trustworthy behavior and also is more likely to make a trusting choice (cooperate) when: 1) "person" has some power over "other" and can influence the outcomes of "other" (Deutsch, 1958, p. 276; Solomon, 1960, p. 226, 3) "person" has some way of reacting to "others" possible violation of the trust relationship, which is known to "other" (Deutsch, 1958, p. 273), and 4) when there is a third party present who will also view noncooperative behavior by "other" as detrimental to his own interests (Deutsch, 1962, p. 315). Thus, by reducing the risk to

"person" in the situation, "person" will be more willing to trust "other" and cooperate.

Fourth, certain organization development efforts have increased trust levels. Lawler and Hackman (1969) found that employees who participate in the development of pay plans become more trusting of management's intentions to administer the plan fairly. Kegan (1971) found the "properly" designed organization development efforts (sensitivity training) could significantly increase trust levels. Gibb (1964) suggests that organizations which wish to increase individual trust levels must first create a trust environment. Although Gibb has not conducted rigorous empirical research, based on his extensive experiences as a consultant he concluded that a trust environment has four major elements. First, the situation must treat each person as unique. There is reduced emphasis on role prescriptions, formal communication channels, status distinctions and attempts to fit people into categories. Second, the system is open to the person and the number restraints is minimized. Organizations which emphasize rules and regulations are ones which manage without trust. Third, trust is enhanced in situations where self determination is emphasized. People are encouraged to realize their own goals. Finally, trust is facilitated where there is a norm of interdependence and cooperation. Team-building concepts will teach people to interact effectively and effective interaction builds trust. Fifth, finally, qualitative factors of the relationships between "person" and other influences

perceptions of trust. Griffin (1967) found that trust was related to personal attraction of the speaker for the listener. Furthermore, that the majority opinions of other listeners would influence the degree of trust that "person" would place in "other." Concurrently, Johnson and Noonan (1972) found similarities in beliefs and values between "person" and "other", and liking for "other", to be important in the development of trust.

Trust as the Independent Variable

Trust then has been sufficiently well defined so that measures of this construct have shown it to be empirically sound, i.e., valid, reliable, and stable. Furthermore, research provides some evidence that perceptions of trust and the resulting cooperative behavior can be predicted and may in fact be influenced by behavioral science techniques. However, one of the most convincing arguments for trust as an important social science construct is the powerful influence that it has on human behavior. Psychologists attribute increased levels of trust to more rapid intellectual development, increased originality, emotional stability and self-control, and decreased physiological arousal to defend one's self against threat. Furthermore, the trusting individual has been found to be less dependent upon others, and to be better adjusted psychologically. On the other hand, the lack of trust has been found to be an important determinant of alienation, delinquency and suicide (Rogers, 1961, pp. 39-58; Geller,

1966, pp. 4-5; and Rotter, 1971, p. 450). Political scientists have found that trust levels of leaders contribute substantially to the power of that leader (Gamson, 1968, p. 42). In counseling relationships, the development of trust is considered crucial if the client is to make meaningful changes in his life.

Although studies in these fields have shown that trust has a powerful influence on individual behavior, the more detailed look at this influence which follows will focus on the effect of trust on organizational processes.

Probably because trust would be expected to affect the quantitative and the qualitative aspects of communications, a substantial amount of research has been done in this area. Based on almost 30 years of trust research, Gibb (1972) contended that without trust, open communications would be impossible.

People who trust each other tend to be more open with each other. With high trust people are free to give information and feelings and to respond spontaneously to questions, are less apt to devise control strategies to manipulate others, are less apt to be closed and devious, are less apt to manufacture rumors or distortions, perhaps have less need to engage in extra communications, and thus, they lay the groundwork for higher productivity. (Gibb, 1972, p. 377).

By the same token; people with low trust

....use more strategy, filter information, build interpersonal facades, distort or hide attitudes deliberately or unconsciously hold back relevant feelings and information in the process of interpersonal in-fighting, distort feedback upward in the direction of personal motivations, engage in extra communications, and thus, indirectly sabotage productivity. (Gibb, 1972, p. 377).

Gibb's observations have received considerable empirical support. Mellinger (1956), for example, found that a communicator who does not trust another person is motivated to conceal his own attitudes about an issue by being evasive, complaining, or using aggressive behavior. Thus, the perceptions of the person who receive the communications is impaired; and it is difficult for him/her to act appropriately to the actual situation. These findings were based on data from 330 professional scientists engaged in laboratory research. In another field study in a large organization, Jackson (1959) found that where trust was high, commitment was more freely communicated and the recipient was more accurate in perceiving the sender's opinion. Furthermore, increased communication will only lead to a better understanding when participants have initially trusted another.

Read (1962) in a study of communication in large organizations, examined the willingness of subordinates to communicate work-related problems to their supervisors. Interviews were utilized with superior-subordinate pairs of 104 middle management personnel from three companies. Accuracy of upward communications was operationalized as the degree of agreement increased between a superior and a subordinate about problems the subordinate was having with his work. The results indicated that the stronger the mobility needs among executives, and the less trust they hold for their immediate supervisors, the greater is the tendency toward inaccurate communications. Trust has also been found to be instrumental

to collective bargaining relationships. Bass and Mitchell (1976) found the need for collective bargaining among faculty members was due, in part, to perceived lack of organizational trust. Furthermore, trust of constituents is going to affect how bargaining proceeds and if, in fact, an agreement is reached according to experimental research conducted by Wall (1975). Finally, Roberts and O'Reilly (1974) found subordinate trust in their superiors was significantly and positively related to desire for interaction and satisfaction with communications in three or four organizations. Thus, empirical evidence consistently supports the notion that trust is a major determinant of effective communications.

Trust also affects problem solving and decision making. Zand (1972) manipulated trust in a problem solving situation under experimental conditions. He used the directions for a problem solving exercise to establish a mental set toward low trust among half of the groups and high trust among the other half. Zand (1972) found, "...highly significant differences in effectiveness between the high-trust groups and the low-trust groups in the clarification of goals, the reality of information exchange, the scope of search for solutions and the commitment of managers to implement solutions." The findings indicated that shared trust or lack of trust apparently are a significant determinant of managerial problem solving effectiveness. Furthermore, trust is positively associated with participation in problem solving and decision making activities according to Hollon and Gemmell (1977). Parloff and

Handlon (1966) found that mistrust and defensiveness reduced a group's abilities to recognize and accept good ideas which would certainly be central to problem solving process. Gamson (1968) contends the way acceptance of decision-making is obtained in an organization is influenced by trust levels. If trust is high, persuasion will be used as a means to influence leaders. At moderate levels of trust, positive inducements will be used; at low levels of trust, threats or negative sanctions will be used; at low levels of trust, threats or negative sanctions will be used to pressure the decision makers in the system.

Trust levels in the organization will also influence people's attitudes and feelings toward the organization and their jobs. Driscoll (1978) found trust in management was a better predictor of overall satisfaction than perceived participation in decision making. Trust even adds significantly to predictions of satisfaction brought about by participation in decision making itself. In fact, Porter, et al., (1975) reported that the level of trust will affect how individuals react to subjective global ratings of performance. When trust levels are low, subordinates tend to react defensively and to reject the evaluation. When trust levels are high, this form of performance rating can be used effectively (Porter et al., 1975, p. 328). By the same token, supervisors are also affected by the trust of their subordinates. Sussman (1973) reported that supervisors who perceived that their subordinates trusted them tended to have higher job satisfaction

than those supervisors who perceived that their subordinates did not trust them.

Finally, Gibb (1965) contends that trust levels in the organization will determine what, if any, mechanisms management will use to control individual behavior. Where there is a lack of trust, management will resort to the following kinds of controls:

- Keep a close check on hourly people

- Require frequent reports

- Maintain a tight security system

- Make frequent inspection trips

- Keep a tight rein on expense vouchers

- Issue frequent orders with explanations

- Have checkers watch the time clock

- Have many strict rules around the plant

- Withhold information from subordinates

- Have guards make frequent trips around the plant

- Make people sign requisitions for items like pencils
or paper clips

As might be expected, these types of control mechanisms are expensive and would certainly contribute to distrust in the work setting. Conversely, Gibb (1965) characterizes organizations with high level of trust as not needing to rely on rules and regulations to control employee behavior. Goals are used to direct behavior and because of the trust environment, people are willing to commit themselves to these goals. When difficulties do arise, problem solving is used to determine

and implement corrective action.

As is evident from this review of the literature, there has been substantial interest in the trust construct. The resulting research has indicated that trust is measurable, that it is a stable variable and that it is a powerful predictor of human behavior.

Summary

In this chapter the problems managers are reported having in instituting and maintaining MBO systems are identified as the central research issue. As a result, the MBO consultant was analyzed in terms of goal theory and the origination of MBO. How MBO differed from conventional managerial approaches and the way MBO was conceptualized as an interpersonal and system wide process was examined. Finally, its relationship to employee performance and organizational effectiveness was reviewed. Based on this examination of the literature, it was determined that MBO was treated consistently as a construct. However, we note there were obvious difficulties when it came to operationalizing MBO in any functioning organization. More specifically, the interpersonal climate of the organization was found to be a major source of these operational difficulties. Trust, as one aspect of climate, was identified as having a particularly powerful influence on the MBO process.

As a result, trust was examined in considerable detail as to its definition, measurement, construct validity and its relationship to other variables. The fact that the trust

construct was found to be conceptually sound and to have such a powerful influence on interpersonal behavior, supports its linkages to a management system which emphasizes the interpersonal relationship between superiors and subordinates.

In the next chapter, the theoretical and empirical literature which focuses on the trust-MBO relationship will be examined. A model of the proposed relationship between trust and MBO variables will be constructed and hypotheses for testing this model will be developed.

CHAPTER II

THE TRUST-MBO RELATIONSHIP

Introduction

Having examined the trust construct in considerable detail, its centrality to organizational processes is apparent. Trust has been shown to be theoretically and/or empirically related to communications, problem solving, bargaining, willingness to commit to goals, the methods used to control individual behavior, employee response to performance ratings, and the attitudes and feelings people have about their jobs. In fact, Gibb has written extensively on the influence of trust on managerial behavior. He finds that in a state of low trust, defensive management practices are used which include data restrictions, facade formation, use of strategy, gimmicks, tricks, manipulation of extrinsic rewards and tight external controls. Conversely, in a state of high trust, participative management practices, which include open and spontaneous data flow, problem solving, need and growth assessment, and group selected internal controls, are used. It is not a large theoretical leap to propose that the success of a management system such as MBO would be related to trust levels within the organization. However, it took until some 20 years after MBO was introduced for trust to be recognized

by management theorists as a factor which must be taken into consideration when installing an MBO program.

Theory

Toward the later part of the 1960's management theorists and consultants were forced to recognize that many MBO installations were simply failing to deliver the expected results. Somehow the program or its application was faulty. In response to this problem, Patten (1971) proposed the use of organizational development (OD) technology to promote a cooperative relationship between a superior and subordinates and the teams of managers who interfaced administratively or functionally before MBO was implemented. Although Patten referred to an overall organizational climate or environment that would be conducive to MBO, trust was not recognized as the crucial element in the MBO installation until he reformulated the theory a few years later (Patten 1977).

Shortly, thereafter, Porter et al., (1975) also recognized that trust was a key determinant of organization revitalization. They hypothesized that a climate of trust must be developed before other OD goals can be attempted successfully. Figure 3 is the model for these hypothesized sequential and interlocking relationships among OD goals. These are the same basic factors that Patten (1971) proposed as OD issues which must be resolved before an organization could be prepared to install MBO. Although Porter et al. did not suggest that MBO would be the appropriate strategy for

revitalization, they recognize that clarification of organization goals and obtaining commitment to those goals must become an on-going process in the organization.

Since Patten first proposed this approach in 1971, it has been the take off point for a number of articles and MBO consulting approaches which incorporate organization development concepts and techniques in their MBO models. Ford (1972) articulated this relationship in more detail:

"Perhaps the most important of these conditions (for individual and organizational growth and development) is mutual trust -- trust that is felt in the interpersonal relationships between individual executives and their subordinates and in the more impersonal relationship between the management group and employees. In part, this means that the organization must develop a reputation for treating employees with equity and fairness. But it means more than that. It means the willingness to deal with people in a manner which is protective of their dignity and security; it means establishing an atmosphere that has the quality of assurance and that encourages reliance.

Trust has a great bearing on an individual's willingness to commit himself to the attainment of enterprise objectives and to engage in a meaningful dialogue on those objectives. Dialogue, in turn, is a base for understanding responsibility and performance expectations. Likewise, trust is an important and necessary ingredient of the creative and innovative exercise of capability. Finally, trust is an important aspect of an individual's willingness to accept change and, perhaps more significantly, of his willingness to change his personal behavior." (pp. 5-64).

Not only did Ford (1972) recognize that trust was a necessary basic value that had to exist for goal setting to take place, but that trust was also necessary if people were to accept any organizational change. However, Ford (1972) also perceived trust as being influenced by MBO.

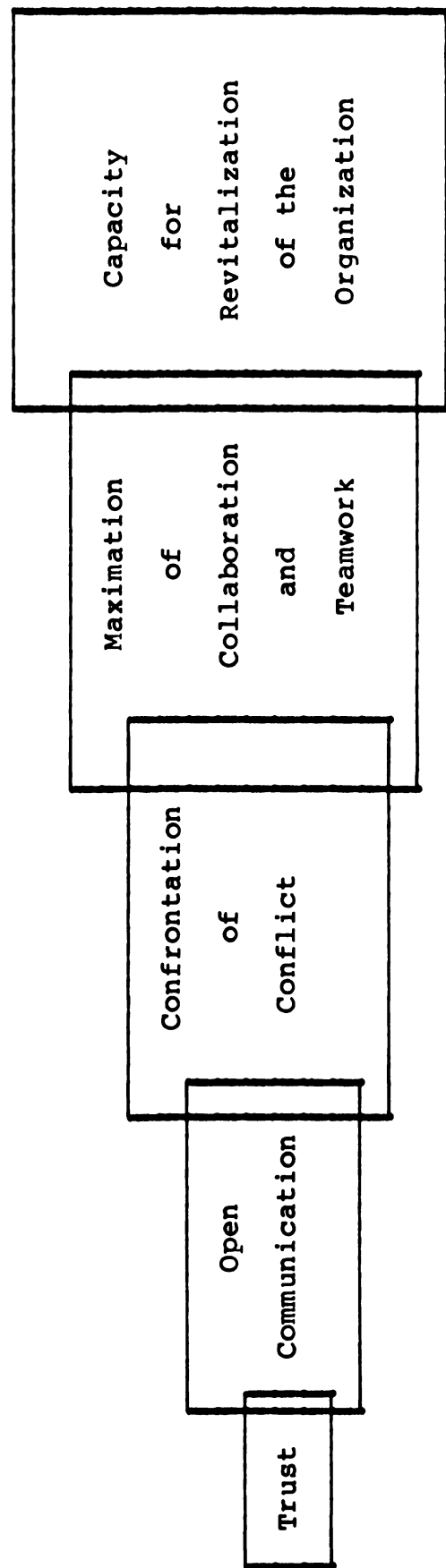
"Mutuality of trust is, in part, brought about by example. It is also brought about by encouragement of meaningful relationships and by expression of empathy and warmth in interpersonal dealings. Research evidence indicates that trust develops more readily when there is opportunity for relevant personal interaction, and also that the subordinates are more likely to trust their managers when it is known that the latter can control the situation at the next managerial level. (Such control would seem to be facilitated by the installation of an MBO system)..."

The statement in parenthesis was added by Patten (1971) when he later quoted Ford's (1972) remark. Thus, Patten has also modified his previous thinking. The model is not strictly linear, as originally conceptualized, in that MBO would also be used to increase trust levels.

Empirical Evidence

Theoretically, then, trust is considered both an important determinant of a successful MBO installation and also, an influence on trust. However, only one piece of empirical research has examined the relationship. This study has already been discussed briefly in the MBO section because it referred more directly to the influence of organization climate on an MBO system (Hollmann, 1976). However, it is examined again in this context because one of the dimensions of his climate instrument is trust. Specifically trust was measured with three items in the shortened version of Likert's Organizational Characteristics Questionnaire. Hollmann (1976) found utilizing multiple regression analysis (controlling for type of work, organizational level and need for independence) that manager's perceptions of supportiveness of climate and

Figure 3
HYPOTHESIZED SEQUENTIAL AND INTERLOCKING
RELATIONSHIPS OF ORGANIZATION DEVELOPMENT GOALS



and their assessment of MBO effectiveness were positively and significantly related. Although Hollmann (1976) was careful to point out that causality could not be determined, he discussed his results in terms of managerial climate influencing how managers would assess the MBO program.

"Operationally, these results imply that firms experiencing difficulties with their MBO programs should analyze the climates with groups using MBO -- perhaps their program is being implemented in work groups with relatively nonsupportive climates. Similarly, companies contemplating the use of MBO may wish to examine their climates before introducing the program; prevalence of nonsupportive climates could suggest postponing MBO until climates are shifted in a more supportive direction." (p. 571).

However, upon examining his sample and research design one can argue persuasively that the successful use of MBO resulted in a supportive work climate, i.e., high trust. Hollmann (1976) collected his data from a group of managers who had been using MBO more than 6 months and another group who had used MBO for more than a year. In this amount of time, managers who had been successfully using MBO could have increased the work climate supportiveness substantially. Of course, this explanation is not more justifiable than the conclusion drawn by Hollmann (1976) because a correlational analysis does not allow the direction of causality to be determined.

Although not directly related to the trust-MBO causality question, there are two studies which examine the relationship of trust to other management interventions. Shirley (1973) found a positive relationship between employee trust in top

management and attitudes about management decisions to merge with another organization. He concluded that to facilitate organization change management must be trusted by employees. In fact, Shirley (1973) suggests that, to avoid resistance to change one should replace top managers who are not trusted. In that this is also a correlational analysis, one point in time data, one could also argue that the employees who were positively disposed to the merger decided that management could be trusted because management had made a good decision. By the same token, employees who did not favor the merger decision could have perceived the decision as a violation of trust.

Keller (1978) conducted a longitudinal study where trust was measured at three points in time during the implementation of a managerial grid program. The managerial grid program was developed and has been written about extensively by Blake and Mouton. The training in this program was instituted for 131 hourly and salaried employees from an oil refinery and chemical plant of a major American oil corporation. Over the assessment period the participants showed a non-significant decrease in trust. This decrease in trust, Keller (1978) concluded, was the result of a poorly installed managerial grid as shown by a lack of commitment and support for the program by management, lack of follow-up and implementation efforts, and because only a small percentage of employees actually attended the program. The program was cancelled when management eventually concluded that the cost of the program was not worth the limited benefits received. It should be

noted that Keller (1978) assumed the managerial grid (intervention) was causally related to trust which was the opposite direction proposed by Hollmann (1976) and Shirley (1978). Furthermore, the data were not analyzed and/or reported in such a way as to determine causality. The quality of the grid installation was not measured over time; he only concluded that it failed when the program was cancelled. As a result, a reduction in trust toward management and the grid program could have caused the reduced enthusiasm for the program which led to its eventual elimination.

Although the following study does not examine an actual management intervention, it was a carefully designed experimental study which illustrates a third possible relationship between trust and MBO. Zand (1972) manipulated trust in a problem-solving situation under experimental conditions discussed previously. To establish a theoretical rationale for the methods used to induce different levels of trust, he developed a spiral reinforcement model of the dynamics of trust. This model showed that initial levels of trust will be accentuated because of the resulting behavioral patterns. Under conditions of mistrust, Zand (1972) hypothesized the following interpersonal outcomes.

One who does not trust others will conceal or distort relevant information, and avoid stating or will disguise facts, ideas, conclusions and feelings tht he believes will increase his exposure to others, so that the information he provides will be low in accuracy, comprehensiveness, and timeliness; and therefore have low congruence

with reality. He will also resist or deflect the attempts of others to exert influence. He will be suspicious of their views, and not receptive to their proposals of goals, their suggestions of reaching goals, and their definition of criteria and methods for evaluating progress. Although he rejects the influence of others, he will expect them to accept his views. Finally, one who does not trust will try to minimize his dependence on others. He will feel he cannot rely on them to abide by agreements and will try to impose controls on their behavior when coordination is necessary to attain common goals, but will resist and be alarmed at their attempts to control his behavior.

When others encounter low-trust behavior initially they will hesitate to reveal information, reject influence, and evade control. This short cycle feedback will reinforce the originator's low trust, and unless there are changes in behavior, the relationship will stabilize at a low level of trust.

All of this behavior, following from a lack of trust, will be deleterious to information exchange, to reciprocity of influence, and to the exercise of self-control, and will diminish the effectiveness of joint problem-solving efforts. (p. 230).

By the same token, initial levels of trust would result in high trust because a similar cycle would occur. Although Zand (1972) did not test this hypothesis directly, the very high or very low trust levels in his experimental groups seems to indicate that this might have occurred. In fact, in the debriefing interviews participants said that their levels of trust varied during the experiment in response to the behavior of others in the group. These results are consistent with Gibb's observations that initial levels of trust can be transformed into behavior that is trusting (or mistrusting) through communication of information, the ways in which attempts to

influence people are made, and the methods used to control individual behavior. Based on trust (or mistrust), these behaviors were predicted to enhance trust (or mistrust).

Although there is no direct empirical evidence of an interaction effect taking place between trust and MBO, it seems possible. Given a low trust situation, goal setting in the superior-subordinate relationship would reflect by the individuals on attempting to reduce their vulnerability to the other person. Because of communication distortion, goals set at unrealistic levels, a lack of commitment, and fear of the consequences, mistrust would probably increase.

Thus, theory and empirical research indicate that trust and the assessment of an MBO programs success are positively related. However, the direction of the relationship has not been determined and, in fact, the literature indicates that there are competing hypotheses:

- 1) Trust levels will be a major factor in determining the success of an MBO installation.
- 2) The success of an MBO installation will be a major factor influencing the trust level in the organization, or,
- 3) There is an interaction effect between trust and MBO.

Because of this causal conflict and confusion in the literature, basic prescriptions concerning the appropriateness of MBO in given situations cannot be made. In other words, if low trust levels exist in the organization, should installation of an MBO program be postponed until trust levels can

be increased or should the MBO program be installed immediately to increase trust levels so the organization can function more effectively.

Conceptual Model

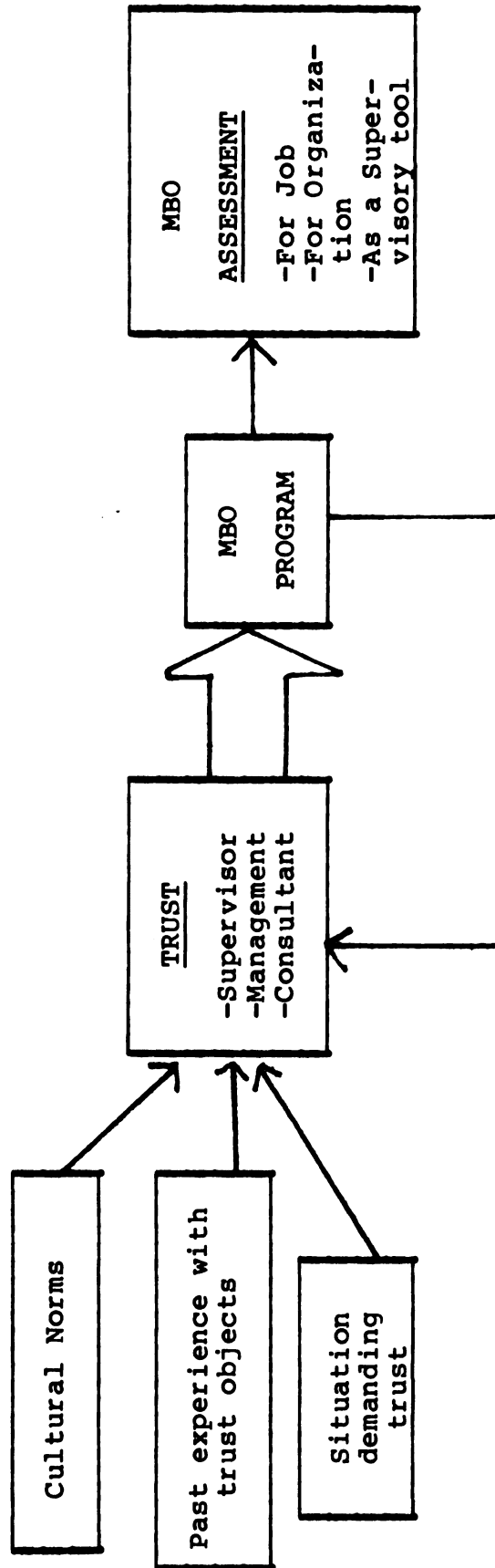
To answer the above question a test of the following conceptual model (Figure 4) has been devised. The major variables in the model are trust, i.e., in the supervisor, in management and in the consultant; and the managerial assessment of MBO. Although not included in this analysis, the model recognizes that cultural differences, past experiences and the situation influence trust as discussed in Chapter 1. Furthermore, the model recognizes that experience related to the MBO program will have an effect on trust but that this effect will occur over a longer period of time and have less influence on trust than trust will have on an assessment of MBO.

Managerial Assessment of MBO

Managerial assessment of MBO served as the dependent variables in this study.* Essentially this was an attitudinal variable dealing with the managers' assessment of the

*It would certainly be desirable to assess the effectiveness of the MBO program with actual performance data. However, performance data on each individual or work group does not exist. The data only exists for the total organization and quasi-experimental design suggested by Campbell and Stanley (1963) requires continuous data prior to and after implementation. Thus, data must be collected over the two to three years before any sort of evaluation is possible. Unfortunately, this is far beyond the scope of this dissertation. However, this data is being collected and will be published at a later date.

Figure 4
CONCEPTUAL MODEL



effectiveness of MBO at three levels. In the first two levels, participants were asked to evaluate MBO on how it directly affected their jobs. Based on an extensive review of the literature Hollmann (1973) identified seven benefits that are attributed to MBO for the individual job.

- 1) Effectiveness in planning and organizing work.
- 2) Effectiveness in providing an objective appraisal of work performance.
- 3) Effectiveness in motivating the best job performance.
- 4) Effectiveness in coordinating individual and work objectives.
- 5) Effectiveness in superior-subordinate communications.
- 6) Effectiveness in superior-subordinate cooperation.
- 7) General satisfaction with MBO as it relates to the individual's job.

Based on these benefits, Hollmann (1973) developed two sets of questions. One set referred to the individual's own work, and the other set referred to the individual's perceptions of MBO as a tool for managing his subordinates. This investigator found that these attributes of MBO represent the essence of MBO at the individual levels that are articulated in MBO literature. As a result, they were adopted for this investigation.

For the third level, managers were asked to assess the impact of MBO on the organization as a whole. This is possible because the MBO program is typically presented to them as a total management system which is going to help

managers solve some basic problems in the organization, i.e., communications and cooperation between divisions.

The validity for this form of managerial assessment is based on the assumption that experienced managers and supervisors have the capability to compare the previous approaches to management with the newly installed MBO system.

Trust

Although there is disagreement as to the direction of causality between trust and MBO, trust is more frequently chosen as the causal variable in the literature. As a result the conceptual model and the hypotheses assume initially that this is the causal order. This assumption seems reasonable since trust has been shown to be a stable variable and resistant to change when an OD intervention is made. Furthermore, trust levels held by individuals are certainly influenced by many other factors than the MBO intervention represented in the model. This does not mean that MBO will have no affect on trust levels, however, significant changes in trust will only occur after the MBO system has been utilized for a substantial amount of time.

Because a specific reference to the trust situation has been shown to be a stronger predictor of behavior than generalized trust (Beattie, 1972; Kessel, 1971 and Schlanker, et al., 1973), trust has been conceptualized in terms of relationships that organizational members have that are instrumental in the MBO process, i.e., the supervisor, management and the MBO consultant.

Trust in Supervisor

The supervisor's role in the MBO process has received considerable attention in the management literature for he is directly involved in the goal setting process. Probably the best way to illustrate how individuals will respond to MBO under conditions of high and low trust would be to describe a situation and predict how individuals will behave according to theory and empirical evidence. Although trust is best conceptualized as a variable with a continuum running from high trust to high mistrust, to avoid confusion, it will be discussed here as two distinct categories.

Under conditions of high mistrust, the objective setting relationship between superior and subordinate will be characterized by one or both individuals concealing or distorting relevant information to avoid exposure and thus limit possible vulnerability. Both individuals will resist attempts of the other to exert influence, and will be suspicious of information that the other provides. Furthermore, neither will be receptive to the other's proposals of goals, suggestions for reaching goals and/or definition of criteria and methods for evaluating progress. The superior will be unwilling to accept input from the subordinate concerning the establishment of objectives and will attempt to impose more controls to ensure desired behavior. Whereas the subordinate will try to avoid setting challenging goals or specific completion dates, he will not feel committed to the supposedly agreed upon goals, and will feel that performance evaluation on these objectives

are not an accurate assessment of performance. Because the objective setting processes are based on information that has low accuracy, both parties will feel that the goals are not realistic sets of expectations about the future (being either too low or too high) and will result in misunderstandings between the superior and subordinate. Because of the dysfunctional consequences inherent in goal setting under these conditions, both supervisors and subordinates will say that the MBO process is not working, be dissatisfied with this process and avoid using it if possible.

Whereas, under conditions of high trust, the objective setting relationship between the superior and subordinate will be characterized by both individuals providing relevant, comprehensive, accurate, and timely information, and thereby contributing realistic data for establishing goals. They will have less fear that their exposure will be abused and will therefore be receptive to the influence of others. They will also accept interdependence because of confidence that others will control their behavior in accordance with agreements, and therefore will have less need to impose controls on others. The superior will be willing to consider and incorporate input from subordinates for establishing objectives and will not require elaborate control measures to ensure the subordinate is performing the desired behavior. Feedback will be designed to go directly to the subordinate and he will be requested to contact the superior concerning major changes which will impact work done by other employees or prevent deadlines

from being reached. The superior will be more willing to adjust time frames or change objectives as the result of environmental changes. The subordinate will believe he was more instrumental in establishing the objectives and will be more committed to their attainment. He will also be more willing to accept performance appraisals given by the superior concerning his accomplishments and feel the assessment is fair. In fact, because the objectives setting process is based on an exchange of accurate information, both parties will feel the goals are realistic and challenging to the subordinate. Because of the functional consequences inherent in the process, both the superior and subordinate will report that the MBO process is working, be satisfied with the results and, in fact, make it a permanent part of their relationship. This personal experience with MBO will also influence how they perceive the impact of the new management system on the organization as a whole.

Therefore, it may be hypothesized that:

1. Trust in the superior will be causally and positively related to how an employee will assess the usefulness and the satisfaction with MBO in regards to his job.
2. Trust in the superior will be causally and positively related to how an employee will assess the impact that MBO has had on the organization.
3. Trust in the supervisor will be causally and positively related to how an employee will assess the usefulness of MBO as a tool for managing his subordinates.

Trust in Management

Management, in this context, refers to the top level decision makers in the organization and not to one particular person. It is this group which decides to install the MBO system in the organization and contracts the project to a particular consulting group. Although on a day-to-day basis management's involvement is less direct, it should be clearly communicated that managers and supervisors will utilize MBO. Theory states very clearly that a change program must have support from top management (Huse, 1975; and Schein, 1970). Management is charged with the responsibility of designing mission statements to provide the context in which goals will be established. Furthermore, it is management's responsibility to see that the MBO process is used in concert with other organizational processes, i.e., planning, budgeting, merit pay decisions, performance appraisals, etc. Thus, management's involvement in MBO should be perceived as substantial by organization members. As a result, trust or mistrust toward management should have a significant effect on how the MBO program is perceived and assessed.

Under conditions of high mistrust, organization members perceive that the MBO program is a management strategy for manipulating them. Subordinates will be suspicious of information that management provides and higher management attempts to specify how managers and supervisors will manage their subordinates. They will perceive the resulting orientation of MBO as threatening and written goals as an opportunity for

management to document their inability to obtain results that may not be under their control. This will be especially true if goal attainment is linked to rewards, i.e., pay increases and promotions, and/or punishments. As a result, organization members will be reluctant to participate in the MBO process, be critical of the results of the MBO program, and express dissatisfaction with MBO.

Under conditions of high trust, MBO will be considered a very functional approach to management. Organization members will perceive the installation of an MBO program as an honest attempt by management to facilitate the smooth operation of the organization. Consequently employees will be receptive to giving MBO a chance and will make an honest effort to make the goal setting process between themselves and their superiors work. Furthermore, they will more readily recognize and acknowledge the positive results of the MBO program.

Thus, it may be hypothesized that:

4. Trust in management will be causally and positively related to how an employee will assess the usefulness and satisfaction with MBO in regard to his or her job.
5. Trust in management will be causally and positively related to how an employee will assess the impact that MBO has had on the organization.
6. Trust in management will be causally and positively related to how an employee will assess the usefulness of MBO as a tool for managing his subordinates.

Trust in the MBO Consultant

The consultant's involvement in the change process is characterized as a major role in organization development literature. Numerous intervention models have been proposed to help the consultant gain acceptance for the change effort. Trust has certainly been a major concern in these organization development efforts (Porter et al., 1975). However, this treatment of trust most often has focused upon building trust among organization members, i.e., team building and sensitivity training, and/or trust in the proposed change. It is less frequently that concern for trust in the consultant appear in this literature. If, indeed, it is mentioned, comments are general and typically short, i.e., one or two sentences. For example, Huse (1975) lists trustworthiness as one of the basic qualities that an OD change agent must possess.

"...because consistency and honesty help to build trust between the client and consultant, one of the most important issues here is that the consultant have a clear and accurate picture of his own values and norms. Most OD consultants strive to build trust among organizational members and this objective cannot be accomplished unless the consultant behaves according to his own norms and theirs." (p. 307).

Although Huse (1975) considers trust in the consultant important to the success or failure of an OD intervention, he does not specify how organizational members will respond if they trust the consultant as opposed to mistrusting him. Furthermore, the consultant could be perceived as a tool or an extension of management. As a result of an inadequate theory

base and the possibility that the consultant's role may not be distinguishable from the role of management, the following hypotheses must be considered exploratory.

Based on the above qualifications, it may be hypothesized that:

7. Trust in the MBO consultant will be causally and positively related to how an employee will assess the usefulness and satisfaction with MBO in regard to his or her job.
8. Trust in management will be causally and positively related to how an employee will assess the impact that MBO has had on the organization.
9. Trust in the MBO consultant will be causally and positively related to how an employee will assess the usefulness of MBO as a tool for managing his subordinates.

Summary

Upon examining the theoretical and empirical literature on the trust-MBO relationship, it was evident that competing statements about the direction of causality existed. Is trust instrumental for the successful installation of MBO, or can MBO be utilized to overcome mistrust within the organization? Based on the literature which addressed this issue a model was constructed which proposed the causal direction for these variables. The hypotheses consistent with this model were developed.

In the next chapter, the research design used to test the hypotheses is discussed.

CHAPTER III

METHODOLOGY

Introduction

The basic design of this research is that of a field study, with data gathered exclusively through confidential questionnaires. The independent variable was allowed to vary naturally; in that no attempt was made to manipulate trust (independent variable). The intervention was organization-wide with managers and professionals in the organization assessing the effect of this treatment. The data for this study were collected at 3 points in time; 1) prior to the actual MBO installation, 2) during the intervention and 3) after the consultants involvement was 90% complete. It should be clarified that only multiple measures of trust were collected at time 1. Thus, the assessment of MBO, the dependent variable, was made only at time 2 and time 3.

This chapter describes the methodological procedures employed in conducting the study. The following topics are discussed in detail: (1) measurement devices, (2) description of the research setting, (3) MBO installation, (4) data collection procedures and (5) data analysis.

Measurement Devices

Data for the study were collected entirely through a confidential questionnaire which consisted of three parts; i.e., assessment of MBO, a measurement of trust, and basic participant demographic information. The assessment of MBO and the measurement of trust were captured by Likert-type items with 5 response options: strongly agree, agree, neutral, disagree and strongly disagree. Some of the items were reversed scored in order to minimize the likelihood of response set bias.

It was important in this study that the items would be generalizable across jobs, divisions and organizational levels. This questionnaire was administered to all managers, supervisors and professional people in the organization. To be able to match the individual questionnaires that were completed over time and to insure their responses would remain confidential, the participants were asked to place their mother's maiden name on the questionnaire. The investigator found that the mother's maiden name is a piece of information that is normally not shared with other people and does not appear on personnel records. Each questionnaire was accompanied by a cover page of explanation and instructions from the researcher. The cover letters and questionnaires are included in appendices A and B.

Assessment of MBO

The assessment of MBO installation were measured in terms of the specific benefits of MBO suggested by the conceptual

and empirical literature. The instrument focused on three dimensions.

1. The effect of MBO on the participants' job.
2. The effect of MBO as supervisory tool, and
3. The effect of the MBO program on the whole organization.

The items (1-7 and 13-19 Appendix B) for dimensions one and two were taken directly from an instrument designed by Hollmann (1973). These items specifically addressed planning and organizing of work, objective appraisal of work performance, motivation of the best job performance, coordination of individual and work group objectives, superior-subordinate communication, superior-subordinate cooperation and overall satisfaction with MBO. Hollmann (1973) found a high correlation between all seven MBO items (dimension 1).

The correlation coefficients ranged from .406 to .694 and all were significant at the .001 level ($N=112$). However, Hollmann (1973) did not perform a scale reliability analysis because he analyzed each item separately. Furthermore, he did not analyze the correlations between the second set of items (dimension 2) or compare these items with the first set.

The items which assessed the effect of MBO on the organization (dimension 3) were adopted from a set of questions that Carroll and Tosi (1971) had previously utilized to assess the impact of MBO installation on an organization. The items (8-12 Appendix B) taken were modified extensively. These items focused upon cooperation, solution of organization problems,

effect on the organization, improvement of communications and coordination of efforts. Because of extensive adaptations of items, previously developed reliability and validity data would not be appropriate (Tosi and Carroll, 1971).

The items within each of the 3 dimensions are initially assumed to be additive scales based on their content. Thus, items assigned to a dimension will be combined to obtain an average score for each scale. Internal consistency analysis will be used to determine the appropriateness of scale assignment.

Measurement of Trust

The trust measure examines the participants' perceptions of their supervisor, of management, and of the MBO consultant.* Because previously designed trust scales did not incorporate an MBO trust situation, the instrument was specially designed for this study. However, other trust questionnaires were examined so the items could be framed in the conventional terms used to measure trust (Likert, 1967; Roberts and O'Reilly, 1974; Friedlander, 1966; Griffin, 1967). The items that were included into the scale referred to trust as defined previously, i.e., intent and predictability. Because this investigator subscribed to a situational trust model, the items referred directly to specific individuals who were

*A trust in work group scale was also part in the questionnaire but has not been included because theoretically work groups cannot be justified as a predictor of MBO success.

TABLE 3
DIMENSIONS OF TRUST

Dimensions	Questionnaire Instructions
1. Immediate Supervisor	This is the person to whom you directly report and are currently responsible to. Be sure to think of a particular person when answering the following questions.
2. Management	These are the people who make policies, rules and major decisions for DOT (the organization studied).
3. MBO Consultant	This set of questions refers to the MBO (Management-By-Objective) consultants who are helping to establish this program.

instrumental in the installation of the MBO program, and the items were grouped accordingly (see Appendix A). Table 3 describes each of these trust dimensions in term of the directions given on the questionnaire.

Demographic Measures

In the trust literature reviewed previously certain individual differences were found to influence a person's perceptions of trust. Based on these findings, sex, age and race were identified as factors that could effect the participants' trust in supervision, management and the consultant. Moreover, it was recognized by Barton et al., (1978) that in an employment relationship an interaction effect occurs between supervisors and subordinates. In other words, there could be differences in relationships if both were black or white, and if the supervisor were black and subordinate were white, or the supervisor were white and the subordinate were black. Thus, it was recognized that identifying the employee as black or white is not enough. The race and age of the objects of the employees trust is also important.

Because data in this study were available for the subordinate, the data controls were not used for the trust in supervisor analysis. The reason being that an individuals supervisor could be black or white, and older or younger than the participant. However, top management were predominately black and older (50-60 years), and the consultants were younger (mid 30's) and white. As a result age and race could

be used as control factors congruent with Barton, et al., (1978) theoretical position.

Although sex is recognized as having important influence on trust, the few (3) women in managerial or professional positions in the organization studied make it impossible to examine their effect. As a result, they were dropped from the analysis. In that these women did not have men reporting to them alleviated the problem of having the data contaminated by having participants respond to women supervisors.

Description of the Research Setting

The Organization

The field location chosen for this study was a transportation department within a major metropolitan city government. This department had a contract with a consulting firm to install a MBO program which was to be a prototype for other departments within the city. Access to this organization was obtained directly from the Director of the department and the Deputy Mayor of the City. It was agreed that this investigator could collect data from the organization but would in return evaluate the quality of the MBO program installed by the MBO consultants. Thus, the investigator was responsible to top management and did not have a major role in the installation of the MBO program.

Although the department is responsible for public transportation within the city, its primary focus is on the bus system. As a result, the bulk of the employees are

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1. The first step is to identify the problem or issue that needs to be addressed. This involves gathering information and understanding the context of the problem.

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1. *Journal of the American Medical Association*, 1997; 277: 1039-1043.

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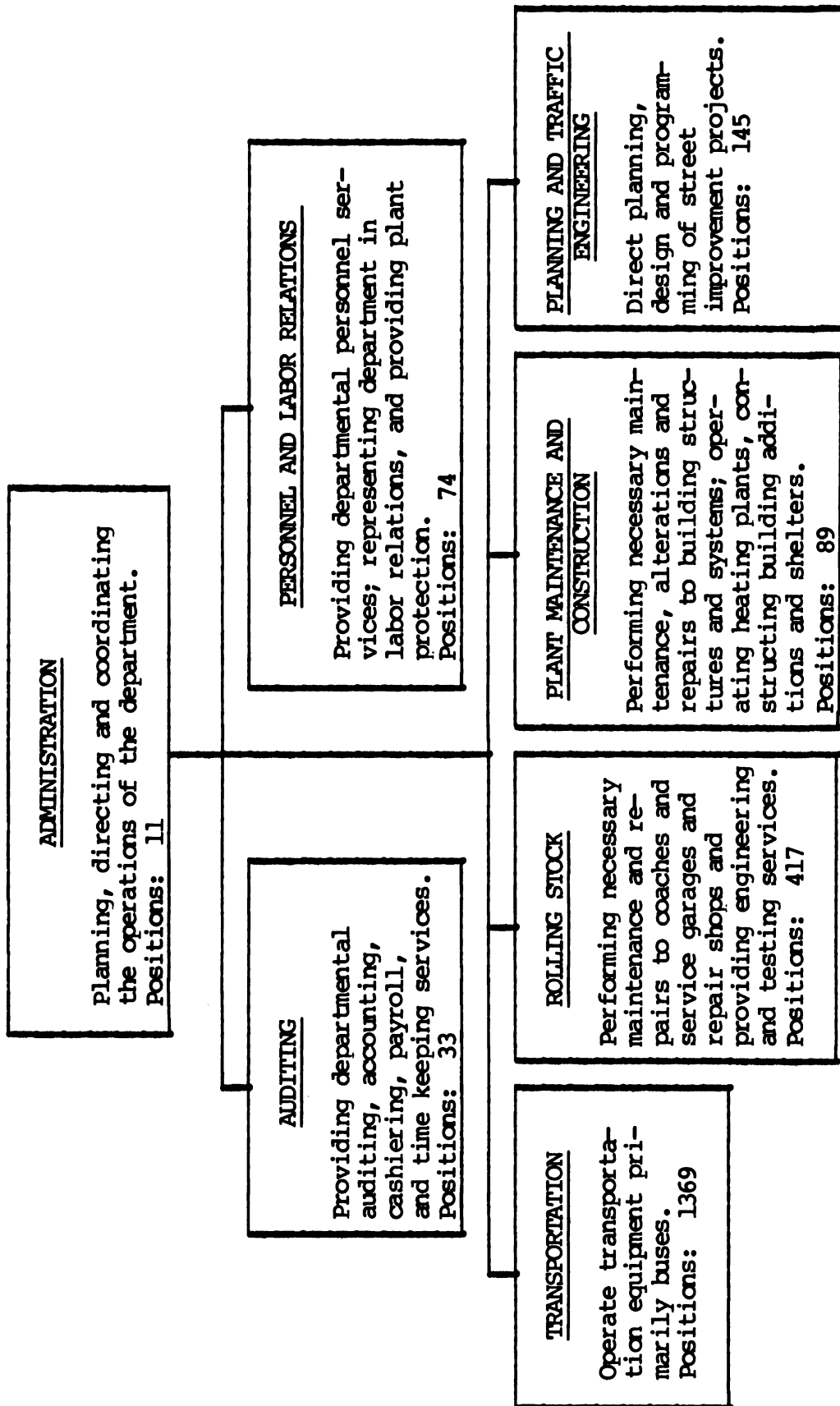
involved in bus maintenance (rolling stock) and bus operations (transportation) as evident in the organization chart (Figure 5). Even though the department has approximately 2,136 employees, there are only 169 classified as managers and professionals. The bus drivers and mechanics in this operation are unionized. Promotion from within has been the traditional policy except for the director's and assistant director's positions which are appointed by the Mayor. The organization is racially mixed (black and white) through all levels of management, but with very few women holding positions other than the traditional clerical ones. The system has 800 buses in operation that are scheduled to travel approximately 100,000 miles a day. Thus, this department is one of the largest city bus systems in the United States.

This organization is geographically dispersed throughout the entire city. Headquarters and a garage which does only major bus repairs are approximately central to the three terminals and repair shops that are located in other parts of the city. In addition to managerial problems created by having employees at different locations, the operation must be staffed 24 hours a day 7 days a week. The peak demand for buses occur during rush hours (7-9 a.m. and 4-6 p.m.) on weekdays; however, buses also run approximately 18 hours a day and provide limited service on weekends. In addition to serving regular riders, charter service is scheduled at any hour of the day or night to provide transportation for "convention" groups visiting the city. Furthermore, bus

1. The first step in the process of the investigation is the identification of the problem. This is done by the investigator, who is usually a member of the research team. The investigator will identify the problem by looking at the data and trying to find out what is going on.

Figure 5

ORGANIZATION CHART



1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that proper record-keeping is essential for transparency and accountability, particularly in financial matters. The text suggests that organizations should implement robust systems to track and document every aspect of their operations, from procurement to sales.

2. The second part of the document addresses the challenges of data management in a rapidly changing environment. It highlights the need for flexible and scalable solutions that can adapt to new technologies and data sources. The author argues that organizations must invest in training and development to ensure their staff are equipped with the skills necessary to manage complex data sets effectively.

3. The third part of the document focuses on the role of leadership in driving organizational success. It stresses that leaders must provide clear vision and direction, while also fostering a culture of innovation and collaboration. The text suggests that effective leaders are those who can inspire their teams to achieve their full potential and drive the organization forward.

4. The fourth part of the document discusses the importance of risk management in achieving long-term goals. It outlines various strategies for identifying, assessing, and mitigating risks, emphasizing that a proactive approach is key to minimizing potential losses. The author suggests that organizations should regularly review their risk profiles and adjust their strategies as needed.

5. The fifth part of the document explores the impact of external factors on organizational performance. It discusses how changes in the market, regulatory environment, and global events can affect an organization's ability to succeed. The text suggests that organizations must stay informed about these external factors and be prepared to respond quickly and effectively to any challenges that arise.

6. The sixth part of the document concludes by summarizing the key points discussed throughout the document. It reiterates the importance of accurate record-keeping, effective data management, strong leadership, and proactive risk management. The author encourages organizations to embrace these principles and work together to achieve their shared goals.

maintenance occurs during those hours that buses are not in operation, employees are assigned to specific shifts based on seniority and type of work performed.

Subjects

Only managers, supervisors and professionals were selected to participate in the study because they were directly involved with the MBO installation. These people received the MBO training and were expected to eventually participate in the goal setting process (MBO). Other employees were excluded because their jobs were restricted to such a substantial degree that individual or joint goal setting discretion were deemed impossible by the consultant and management.

The response rate for the three data collection points is shown on Table 4. Although the percentage of usable questionnaires was high at time 1, only approximately 42% of the respondents provided usable questionnaires for all three points in time. The reasons for the shrinkage were changes in personnel holding a supervisor position, the inability of the investigator to induce participants to return all 3 questionnaires or incomplete data for matching the questionnaires.

Because only 42% of the potential population was used in the analysis, the representativeness of the sample was examined. First, women were excluded from the analysis. This decision was made because 7 of the 10 women that completed questionnaires did not really perform managerial or

TABLE 4
RESPONSE TO QUESTIONNAIRE

Data Collection	Questionnaires Distributed	Questionnaires Returned	Usable Questionnaires	Percentage of Usable Questionnaires*
Time 1	165	159	156	95%
Time 2	150	143	99	60%
Time 3	169	155	66-70**	42%

*The number of usable questionnaires is divided by the number of questionnaires distributed.

**Four respondents did not complete all scales on their questionnaires.

professional work. Although the majority of these women were represented as administrative assistants and they participated in MBO training, the work was primarily clerical in nature. However, the other demographic characteristics which were collected, age and race, showed almost the same mean values for respondents and non-respondents. There were slight differences in age, 46 and 47, for the population and the participant data analyzed, respectively. The proportion of blacks (55%) and whites (45%) remained the same.

MBO Installation

The director of the transportation department was appointed to his position in January 1977. He soon realized that this department had serious problems in meeting its responsibilities to the riding public. Buses were late, dirty and gangs of youths were assaulting passengers. Employees were demoralized, large number of experienced people were retiring and absenteeism controls were not in existence (in excess of 12%). Furthermore, city officials started putting more pressure on the transportation department to perform. Increasing gas prices were inducing city residents to take advantage of public transportation. The mayor realized that to sell the city as a convention center he had to guarantee clean and dependable transportation for the city's guests.

After spending almost a year learning about bus systems and the problems that this particular department, the director concluded that his staff did not have the capabilities to

manage the organization. In fact, most of his managerial staff had little formal education and no management training. Based on this analysis, the director decided that the installation of a comprehensive management system with training for all managers and professionals would be a major step in bringing the organization under control and would help them start solving some of the basic problems that plagued the department. MBO was selected to be this management system because the director perceived it as a widely used and successful approach to management. Because no one in the organization or in the city possessed the expertise to develop and install a MBO system, the work was contracted to an outside consultant.*

The consultant chosen for this project was selected because he had substantial experience in installation of MBO systems in large organizations. Furthermore, this consultant was willing to commit himself to the project for substantial amount of time. In fact, it was agreed that 240 consulting days would be needed for installation and these days would be spread over 21 months. The contracted relationship specified that the MBO system was to be customized to meet the needs of the department; that in-house people would be sufficiently trained to use and maintain the system; and that the consultant would be available after the installation

*Although a project manager and staff were used by the consulting organization for this project, consultant is referred to in the singular. The reason being that project manager was introduced to all participants in the study as having a major role in the development and implementation of the MBO program. And in fact, he had a major involvement in all aspects of the program.

to "de-bug" the system. Although a detailed schedule of program events is included in Appendix C, the MBO installation can be summarized in 5 parts.

1. **Situation Analysis:** During the first 3 months of installation, the consultants used meetings, observations and structured interviews to familiarize themselves with the organization. In addition, employees throughout the organizations participated in nominal group meetings.* These structured meetings were designed to identify organization problems and set priorities for their solution.
2. **Data Analysis and System Development:** The information obtained from the various sources was quantified and analyzed. The consultant reported and made recommendations concerning this information. This information was used to design the MBO system and provide specific content for the training that was to occur.
3. **Formal MBO Training:** Managers, supervisors and professional employees received MBO training. The training occurred in 3 parts over 9 months. First, a 2 day seminar (1 day for lower level managers) was conducted which reviewed the MBO process in general and how it would be utilized in the department in particular. Approximately three months later 1 day of interpersonal skill training was given. This session focused on the actual goal setting process that takes place between superiors and subordinates. Finally, a 1 day follow-up training was designed to address issues or problems that they were having in utilizing MBO.
4. **Development of Mission Statement and Objectives:** The director and each division manager was given individual help in establishing mission statements, identifying specific problems and setting objectives for their areas of responsibilities. Then as a group these managers discussed the materials they had developed and solicited feedback and commitment from other managers to meet those goals which required cooperation across divisions.

*The use of nominal groups has become an on-going process in the organization. Employees trained as nominal group leaders are used to conduct these meetings on a regular basis so that problems and issues can be brought to the attention of top management. The MBO process is used to find and implement solutions to these problems and issues.

5. Follow-up: A permanent position was established in the organization to administer and monitor the MBO system. The person selected for this position had substantial MBO training by the consultant and was extensively involved in the MBO installation. Furthermore, the MBO consultant was available and took an active role in identifying and solving problems within the MBO system.

Having reviewed the attributes of this MBO system and attended the training sessions, the investigator is convinced that this installation was what one could term a classic MBO system. In fact, the only major way that this system differed from the MBO process described in Chapter 1, is that, MBO has not yet been formally linked to a merit pay program. An outline of the MBO process established for the organization is shown in Figure 6. Note that it closely resembles the MBO model portrayed in Figure 1 of the first chapter. Finally, the director and top management were extremely pleased with the MBO system.

Data Collection Procedure

The data was collected at three points in time. The first data collection (Time 1) was made at the beginning of the MBO orientation training. The investigator was introduced by the director at each training session and the director asked each participant to cooperate in the study. Then, the questionnaires were distributed, each person immediately completed the questionnaire and sealed it in an envelope, and the investigators collected the responses. Although the consultants had already conducted the situation analysis, participants in the study had not yet been introduced to MBO.

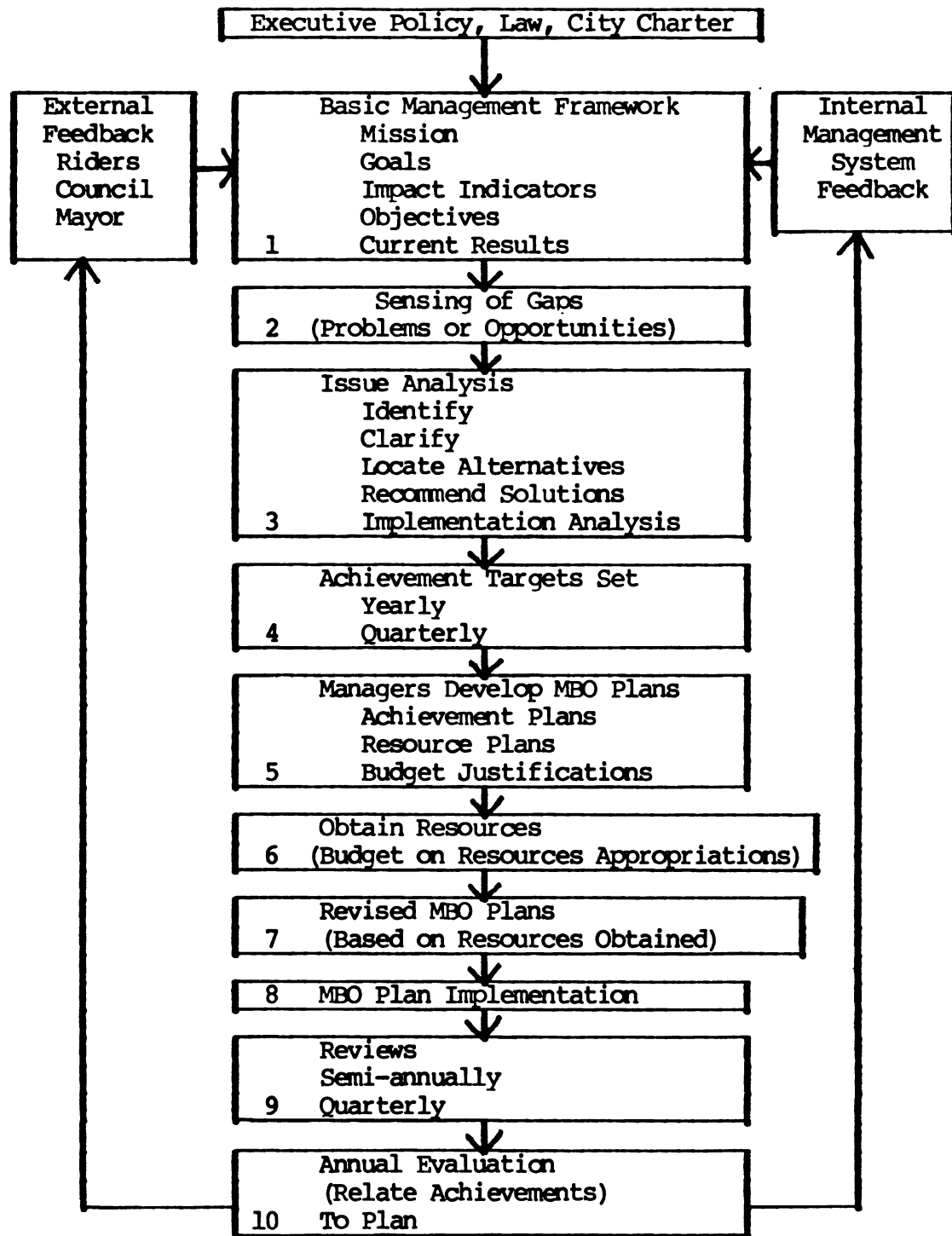


Figure 6: Annual MBO Cycle

As a result, the MBO assessment measure was not included in the questionnaire administered at time 1.

The second data collection (time 2) occurred approximately 3 months later at the second training session. During the 3 months that had elapsed each participant had received MBO training, had examined the mission statements that the director had developed for the organization and had been encouraged to develop objectives with his subordinates and supervisor for the 4 months planning horizon which was to end January 1979. The consultant was concentrating his efforts on helping division managers develop objectives for their areas of responsibility. The time 2 questionnaires were administered by the investigators as they had been in time 1. However, some participants did not attend the second training sessions and so the investigator administered the questionnaire at their work location. The time 2 questionnaire had trust and MBO assessment items (see Appendix B).

The third data collection (time 3) occurred approximately 3 months after time 2. Since time 2, the top managers had drafted their own objectives for 1979-80 fiscal year to begin July 1, 1979. It is unclear to this investigator how much the top ten executives involved subordinate managers in this process. The consultant had obtained a set of formally written objectives for the upcoming year from each division and was planning a team objective-setting retreat in the next month. Nonetheless, based on these objectives, internal budgets had been anticipated for 1979-80. The MBO processes were

TABLE 5
SCALE AND QUESTIONNAIRE ITEMS

Scale No.	Scale Name	<u>Questionnaire Items</u>	
		Time 1	Time 2 and 3
1	Assessment of MBO for Own Job	Not measured	1-7
2	Assessment of MBO Impact on Entire Organization	Not measured	8-12
3	Assessment of MBO as a Supervisory Tool	Not measured	13-19
4	Trust in the Super- visor	1-9	20-24
5	Trust in Management	20-25	29-32
6	Trust in the MBO Consultant	26-29	33-36

*The individual items are part of the revised questionnaire included in Appendix B.

beginning at the top levels but had most probably not involved all managers exposed to the training at time 1. Accordingly this research assesses the trust-MBO relationship at two stages near the beginning of an in-depth MBO implementation process. The time 3 questionnaire was identical to the one used at time 2 (see Appendix B). The questionnaire was administered to participants in groups 5-15 in conference rooms near their work locations. As had been done previously, the participants returned the questionnaire directly to the investigators. However, in situations where the participant was absent or at remote part of the city, the questionnaire was given to them by their supervisor with a stamped self-addressed envelope. The respondents were asked to mail the questionnaire directly to the investigator at his university address. The data collection procedure is summarized in table 5.

Data Analysis

Two basic types of analysis were used in this study. The first concern was to assess the construct validity of the measures to insure the internal consistency of the scales used and a low level of intercorrelation among the different constructs. The second set of analysis was used to test the hypotheses.

Questionnaire Validation

Initially questionnaire items were designed to measure a theoretical dimension and were thus assigned to particular

scales based on content. To check if these items consistently measure the items that they purport to measure, a statistical examination was made. First, item-scale correlations were examined to determine if items had been assigned to appropriate scales. Although these intercorrelations were considered, content of the items was also a major determinant as to whether an item in a particular scale was retained. Next, coefficient alphas were computed for each scale. Then, the intercorrelations of the scales were examined to determine whether or not discriminant validity existed (Campbell and Fiske, 1959) between them. According to Campbell and Fiske (1959):

Where several variables (scales) are all highly loaded on the same factor, their "true" level of intercorrelation is high. Under these conditions, sampling errors can depress validity diagonal values...(p. 97).

There is evidence of discriminant validity when the alpha coefficients (scale reliabilities) are significantly higher than scale intercorrelations.

Scale validation followed the procedure outlined. First, the number of trust items used in time 1 had to be reduced because of constraints on questionnaire length. Based on an examination of item-scale correlations for time 1 (see Appendix D), a factor analysis and a content analysis of the items (see Appendix A), items 2, 4, 6, and 7 were deleted from the trust in supervisor scale and items 23 and 24 were deleted from trust in management scale. No items were removed from

the trust in consultant scale because this scale only consisted of 4 items and removal of any one would have significantly reduced the coefficient alpha. Thus, the total number of items was reduced from 19 to 13 items without a substantial reduction in alpha coefficients as is evident in the following table.

TABLE 6
COEFFICIENT ALPHA FOR TRUST SCALES

<u>Questionnaire</u>	<u>Trust in Supervisor</u>	<u>Trust in Management</u>	<u>Trust in Consultant</u>
Complete	.868	.846	.714
Revised	.843	.824	.714

A factor analysis (orthogonal rotation: varimax) was performed on time 1, time 2 and time 3 data. An examination of the varimax rotated factor matrix (Appendix E), for all time periods, showed that the factor loadings were consistent with the theoretical assignment of items of scales 1, 2, 4, 5, 6. However, items in scale 3 did not load on a separate factor but correlated highly with scale 1. Upon re-examining these items the investigator concluded that both scales referred to the individual job and were worded such that both were measuring the same construct. Scale 3 was dropped from the analysis because scale 1 had sufficient items to measure the construct reliably. Furthermore, because professionals

did not supervise people, they had been instructed not to respond to scale 3 which reduced the response rate of this scale substantially. As a result, hypotheses 3, 6, and 9 focusing on the assessment of MBO as a managerial tool could not be tested.

Next, the interscale correlations were compared against the coefficient alpha for each scale for time 1, time 2, and time 3 and are shown in Table 7, Table 8, and Table 9, respectively. Note that all values of the interscale correlations are substantially less than the coefficient alpha. This is evidence that discriminant validity exists for the scales used in this research.

Hypothesis Testing

The analytic procedures employed in this study were the cross-lagged panel correlation technique and analysis of the dynamic correlations (Campbell and Stanley, 1963; Kenny, 1975; and Vroom, 1966). These tests allow the investigator to infer causality from data collected at two points in time when it is not possible to randomly assign subjects to treatment and control conditions. Although the investigator recognizes the constraints of the assumptions underlying these procedures, it is believed that they are justified given the limitations imposed on the research design by the field location.

There are three basic assumptions inherent in this type of analysis. First, the interval between the time periods used are assumed to correspond to the "true" causal lag.

TABLE 7
INTER-SCALE CORRELATION MATRIX WITH ALPHA IN DIAGONAL FOR TIME 1
(N = 156)

(4) Supervisory Trust			
(5) Management Trust	.836		
(6) Consultant Trust	.389	.841	
	.210	.270	.793
	(4)	(5)	(6)

TABLE 8
 INTER-SCALE CORRELATION MATRIX WITH ALPHA IN DIAGONAL FOR TIME 2
 (N = 138)

(1) MBO Assessment For Job	.928					
(2) MBO Assessment For Organization	.612	.837				
(3) MBO Assessment as Supervisory Tool	.433	.320	.947			
(4) Supervisory Trust	.275	.223	.184	.881		
(5) Management Trust	.370	.384	.107	.431	.802	
(6) Consultant Trust	.386	.295	.171	.253	.191	.802
	(1)	(2)	(3)	(4)	(5)	(6)

TABLE 9
 INTER-SCALE CORRELATION MATRIX WITH ALPHA IN DIAGONAL FOR TIME 3
 (N = 162)

(1) MBO Assessment for Job	.912				
(2) MBO Assessment for Organization	.618	.835			
(3) MBO Assessment as Supervisory Tool	.359	.272	.949		
(4) Supervisory Trust	.328	.312	.245	.926	
(5) Management Trust	.504	.533	.138	.443	.874
(6) Consultant Trust	.410	.454	.228	.396	.340
	(1)	(2)	(3)	(4)	(5)
					(6)

Although this assumption is inherent in all longitudinal research little attention is given to the time it takes for MBO (or, for that matter, other management interventions) to affect the organization. The second assumption is concerned with the subjects from which the data has been collected. These subjects are assumed to be uniform in that the causal relationship between variables holds for all subjects. Violation of this assumption could be overcome by finding a moderating variable which allows the investigator to control its influence. Finally, the variables are assumed to be related to each other such that changes in one variable are always a linear function of changes in the other variable.

Having analyzed the cross-lagged correlational procedure, Clegg, et al., (1977) concluded that its assumptions were no more stringent than those for other statistical tests. In fact they argued that "by itself no single assumption or particular kind of causal relationship will necessarily invalidate the causal inference process."

Given these conditions,* the cross-lagged correlational technique can be described in terms of a set of correlations computed between two variables over time as illustrated in Figure 7. In this figure X and Y are the variables under consideration, 1 and 2 are data collections at two different points in time, and their values represent the correlations between the variables.

*For a more detailed discussion of the assumptions of these analytical techniques see Clegg, et al., (1977) and Kenny (1975).

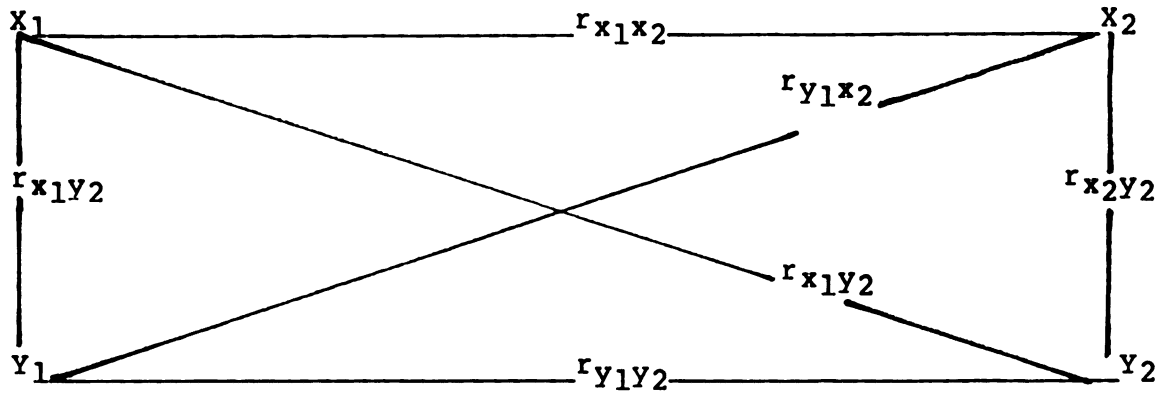


Figure 7: Cross-lagged Panel Correlation Paradigm

In this model, Kenny (1975) has identified three sets of correlations which can be used to infer causality. The correlation between the same measure over two points in time is called the autocorrelation. This correlation appears on the parallel lines in Figure 7 model ($r_{x_1x_2}$, $r_{y_1y_2}$). The autocorrelation indicate the stability of the measure over time and is often termed the test-retest reliability of the measures. If the autocorrelations were 1.0 it would indicate no change had occurred and the causality issue would be irrelevant. However, if the autocorrelations were extremely low then the reliability of the measure would be suspect.

The correlations between the two variables at two points in time are called the synchronous correlations. They appear on the perpendicular lines in Figure 7 ($r_{x_1y_1}$, $r_{x_2y_2}$). The synchronous correlations indicate the consistency of the relationship between the two variables at the two points in time. If there is a significant difference between these two correlations, it can affect the analysis as discussed below.

The correlation between variable X at time 1 and variable Y at time 2; and the correlation between Y at time 1 and variable X at time 2 are called the cross-lagged correlations. These values appear on the 45 degree angle lines in Figure 7. As the name of the analysis implies, causality is determined by examining the cross-lagged correlations. Based on the relative size of these correlations* three possible relationships are possible. 1) If $r_{x_1y_2}$ is significantly larger than $r_{y_1x_2}$, X is believed to cause Y. Configuration of these causal relationships would not eliminate the possibility that Y to some extent influences X, but it would indicate that the preponderance of causation is in the direction of X causing Y. 2) If $r_{y_1x_2}$ is significantly larger than $r_{x_1y_2}$, Y causes X as qualified in number 1. 3) If $r_{x_1y_2}$ and $r_{y_1x_2}$ are equal several interpretations are possible. First, there may be no causal relationship between variables. Second, that both X and Y may cause each other in a positive feedback model. Third, that X caused Y or vice versa, but the effect is too small to be detected with this model. In fact, Kenny (1975) has found this analysis to be a low-powered test in that even with moderate size samples (75-300), statistically significant differences are difficult to obtain.

To determine if significant differences exist, Kenny (1975) suggests that the method developed by Pearson and

*Partial correlations can be computed to control for factors that are believed to influence the relationship of the variable under analysis. In fact, Kenney (1975) has found that controlling for background variables increases the stationarity of the data.

1. The first part of the paper is devoted to the study of the
 2. properties of the function $f(x)$ defined by the series
 3. $f(x) = \sum_{n=0}^{\infty} a_n x^n$ where $a_n = \frac{1}{n!}$. It is shown that
 4. $f(x)$ is an entire function and that $f(x) = e^x$.
 5. The second part of the paper is devoted to the study of the
 6. properties of the function $g(x)$ defined by the series
 7. $g(x) = \sum_{n=0}^{\infty} b_n x^n$ where $b_n = \frac{1}{n!}$. It is shown that
 8. $g(x)$ is an entire function and that $g(x) = e^x$.
 9. The third part of the paper is devoted to the study of the
 10. properties of the function $h(x)$ defined by the series
 11. $h(x) = \sum_{n=0}^{\infty} c_n x^n$ where $c_n = \frac{1}{n!}$. It is shown that
 12. $h(x)$ is an entire function and that $h(x) = e^x$.
 13. The fourth part of the paper is devoted to the study of the
 14. properties of the function $k(x)$ defined by the series
 15. $k(x) = \sum_{n=0}^{\infty} d_n x^n$ where $d_n = \frac{1}{n!}$. It is shown that
 16. $k(x)$ is an entire function and that $k(x) = e^x$.
 17. The fifth part of the paper is devoted to the study of the
 18. properties of the function $l(x)$ defined by the series
 19. $l(x) = \sum_{n=0}^{\infty} e_n x^n$ where $e_n = \frac{1}{n!}$. It is shown that
 20. $l(x)$ is an entire function and that $l(x) = e^x$.
 21. The sixth part of the paper is devoted to the study of the
 22. properties of the function $m(x)$ defined by the series
 23. $m(x) = \sum_{n=0}^{\infty} f_n x^n$ where $f_n = \frac{1}{n!}$. It is shown that
 24. $m(x)$ is an entire function and that $m(x) = e^x$.
 25. The seventh part of the paper is devoted to the study of the
 26. properties of the function $n(x)$ defined by the series
 27. $n(x) = \sum_{n=0}^{\infty} g_n x^n$ where $g_n = \frac{1}{n!}$. It is shown that
 28. $n(x)$ is an entire function and that $n(x) = e^x$.
 29. The eighth part of the paper is devoted to the study of the
 30. properties of the function $o(x)$ defined by the series
 31. $o(x) = \sum_{n=0}^{\infty} h_n x^n$ where $h_n = \frac{1}{n!}$. It is shown that
 32. $o(x)$ is an entire function and that $o(x) = e^x$.
 33. The ninth part of the paper is devoted to the study of the
 34. properties of the function $p(x)$ defined by the series
 35. $p(x) = \sum_{n=0}^{\infty} i_n x^n$ where $i_n = \frac{1}{n!}$. It is shown that
 36. $p(x)$ is an entire function and that $p(x) = e^x$.
 37. The tenth part of the paper is devoted to the study of the
 38. properties of the function $q(x)$ defined by the series
 39. $q(x) = \sum_{n=0}^{\infty} j_n x^n$ where $j_n = \frac{1}{n!}$. It is shown that
 40. $q(x)$ is an entire function and that $q(x) = e^x$.
 41. The eleventh part of the paper is devoted to the study of the
 42. properties of the function $r(x)$ defined by the series
 43. $r(x) = \sum_{n=0}^{\infty} k_n x^n$ where $k_n = \frac{1}{n!}$. It is shown that
 44. $r(x)$ is an entire function and that $r(x) = e^x$.
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 51. $t(x) = \sum_{n=0}^{\infty} m_n x^n$ where $m_n = \frac{1}{n!}$. It is shown that
 52. $t(x)$ is an entire function and that $t(x) = e^x$.
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 54. properties of the function $u(x)$ defined by the series
 55. $u(x) = \sum_{n=0}^{\infty} n_n x^n$ where $n_n = \frac{1}{n!}$. It is shown that
 56. $u(x)$ is an entire function and that $u(x) = e^x$.
 57. The fifteenth part of the paper is devoted to the study of the
 58. properties of the function $v(x)$ defined by the series
 59. $v(x) = \sum_{n=0}^{\infty} o_n x^n$ where $o_n = \frac{1}{n!}$. It is shown that
 60. $v(x)$ is an entire function and that $v(x) = e^x$.
 61. The sixteenth part of the paper is devoted to the study of the
 62. properties of the function $w(x)$ defined by the series
 63. $w(x) = \sum_{n=0}^{\infty} p_n x^n$ where $p_n = \frac{1}{n!}$. It is shown that
 64. $w(x)$ is an entire function and that $w(x) = e^x$.
 65. The seventeenth part of the paper is devoted to the study of the
 66. properties of the function $x(x)$ defined by the series
 67. $x(x) = \sum_{n=0}^{\infty} q_n x^n$ where $q_n = \frac{1}{n!}$. It is shown that
 68. $x(x)$ is an entire function and that $x(x) = e^x$.
 69. The eighteenth part of the paper is devoted to the study of the
 70. properties of the function $y(x)$ defined by the series
 71. $y(x) = \sum_{n=0}^{\infty} r_n x^n$ where $r_n = \frac{1}{n!}$. It is shown that
 72. $y(x)$ is an entire function and that $y(x) = e^x$.
 73. The nineteenth part of the paper is devoted to the study of the
 74. properties of the function $z(x)$ defined by the series
 75. $z(x) = \sum_{n=0}^{\infty} s_n x^n$ where $s_n = \frac{1}{n!}$. It is shown that
 76. $z(x)$ is an entire function and that $z(x) = e^x$.
 77. The twentieth part of the paper is devoted to the study of the
 78. properties of the function $aa(x)$ defined by the series
 79. $aa(x) = \sum_{n=0}^{\infty} t_n x^n$ where $t_n = \frac{1}{n!}$. It is shown that
 80. $aa(x)$ is an entire function and that $aa(x) = e^x$.
 81. The twenty-first part of the paper is devoted to the study of the
 82. properties of the function $ab(x)$ defined by the series
 83. $ab(x) = \sum_{n=0}^{\infty} u_n x^n$ where $u_n = \frac{1}{n!}$. It is shown that
 84. $ab(x)$ is an entire function and that $ab(x) = e^x$.
 85. The twenty-second part of the paper is devoted to the study of the
 86. properties of the function $ac(x)$ defined by the series
 87. $ac(x) = \sum_{n=0}^{\infty} v_n x^n$ where $v_n = \frac{1}{n!}$. It is shown that
 88. $ac(x)$ is an entire function and that $ac(x) = e^x$.
 89. The twenty-third part of the paper is devoted to the study of the
 90. properties of the function $ad(x)$ defined by the series
 91. $ad(x) = \sum_{n=0}^{\infty} w_n x^n$ where $w_n = \frac{1}{n!}$. It is shown that
 92. $ad(x)$ is an entire function and that $ad(x) = e^x$.
 93. The twenty-fourth part of the paper is devoted to the study of the
 94. properties of the function $ae(x)$ defined by the series
 95. $ae(x) = \sum_{n=0}^{\infty} x_n x^n$ where $x_n = \frac{1}{n!}$. It is shown that
 96. $ae(x)$ is an entire function and that $ae(x) = e^x$.
 97. The twenty-fifth part of the paper is devoted to the study of the
 98. properties of the function $af(x)$ defined by the series
 99. $af(x) = \sum_{n=0}^{\infty} y_n x^n$ where $y_n = \frac{1}{n!}$. It is shown that
 100. $af(x)$ is an entire function and that $af(x) = e^x$.

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 California, Berkeley, for their hospitality and for the
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and Filon be used. The Fisher Z transformation is not appropriate because the correlations are themselves correlated in the cross-lagged analysis. It should be recognized that difficulties exist in interpreting cross-lagged differences. First, significant differences between cross-lagged correlations can be due to a relatively unreliable variable being compared with a relatively reliable measure (Kenny, 1975). More specifically, variables whose reliability increases from time 1 to time 2 will appear to be effects and variables that decrease in reliability will appear to be causes. Thus, $r_{x_1y_2}$ and $r_{y_1x_2}$ have to be correlated before the test of the significance of the differences of those correlations is computed. To make this correction there must be a third variable in addition to the two for which causality is being determined. This method is described in considerable detail by Crano et al., (1972).

Second, this analysis does not rule out the possibility that there are two directions for the causal effect.

"Finding $P_{x_1y_2} > P_{x_2y_1}$ is consistent with both X causing an increase in Y and Y causing a decrease in X. Finding $P_{x_1y_2} < P_{x_2y_1}$ is consistent with both Y causing an increase in X and X causing a decrease in Y (Kenny, 1975, 892).

In other words, the results from a study may be susceptible to alternative interpretations. For example, Wanous (1974) determined by cross-lagged correlations that extrinsic satisfaction causes performance and that good performance causes intrinsic satisfaction. Although Feldman (1975) considered these to be perfectly reasonable conclusions he pointed out

that another interpretation was possible.

Equity theory (Adams, 1965) would predict that an increase in performance would cause a decrease in extrinsic satisfaction (incongruent influence) if the subsequent rewards were then perceived as unequitably low (p. 665).

Kenny (1975) acknowledges this problem, and suggests a strategy for determining the direction of causal effect. First, the sign of the synchronous correlations indicate direction. "If the synchronous correlations are positive, they are supportive of X causing increases in Y and of Y causing increases in X. Negative synchronous correlations indicate decreases" (p. 893). However, this could be considered a moot point for this particular study because theory and prior empirical evidence indicate the directionality is not an issue. One would not expect that decreases in the success of MBO would cause increases in trust or decreases in trust would cause the success of MBO. As a result, the particular set of competing hypotheses being tested in this study do not require that directionality be determined.

Another potential limitation of the cross-lagged correlational analysis is its inability to rule out the possibility of a third variable causing the two variables of interest to covary. Dynamic correlational analysis is used to address this problem. The dynamic correlation coefficient is computed by correlating the change in X from time 1 to time 2, with the change in Y over the corresponding time interval. According to Vroom (1966) the stronger the dynamic correlation, the lower the probability that another variable caused trust and

the MBO assessment to covary.

"To be the source of an spurious static correlation between two variables, X and Y, a third variable, Z, must vary within the sample studied and must be correlated either positively or negatively with both X and Y. However, to produce a spurious dynamic correlation between two variables, ΔX and ΔY , the third variable Z must change in different amounts or directions in the members of the sample, and these changes must be correlated with both ΔX and ΔY . To the extent to which they have been no change among members of the sample on variables which could be the source of spurious static correlations, the possibility of spurious correlations would be reduced" (Vroom, 1966, p. 57).

Section 10.1: Introduction to the course

The first part of the course is devoted to the study of the
 basic concepts of the theory of the course. The second part
 is devoted to the study of the applications of the theory.
 The third part is devoted to the study of the applications of the theory.
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CHAPTER IV

RESULTS

Introduction

The purpose of this chapter is to present the results of the study as they relate to the hypothesis formulated in Chapter 2. Dynamic correlation analysis is used to determine if the causal relationship could be the result of some third variable and cross-lagged analysis is used to determine whether trust causes MBO success or vice versa. In the following chapter, these results will be the focus of an indepth discussion.

Hypothesis Testing

The data needed to use cross-lagged panel correlational analysis is presented in the model formats utilized in Chapter 3 to explain this procedure. The correlational values between trust and MBO assessment are lower than would be expected for regular correlational analysis because initial levels of trust (time 1) have been partialled out. Partial correlations are used to subtract out the effect of background factors that are potential sources of spuriousness. Kenny (1975) has found that partial correlations often increase the stationarity of the data by lessening the influence of error due to measurement. Furthermore, the participants' age and race were partialled out

in the trust in management and consultant analysis for reasons discussed in Chapter 2.

The results of the cross-lagged correlations analysis are shown in Figures 8 through 13. Each figure represent a test of one hypothesis. The autocorrelations are entered on the parallel lines in the figure and represent the stability of the measure overtime. The synchronous correlations indicate the degree of the relationship between the variables at two points in time. Their values are entered on the perpendicular lines. If there were significant differences between the synchronous correlations the differential reliability of the variables can affect the analysis. When this occurred the correlation described by Kenny (1975) was made to overcome this problem. Finally, the cross-lagged correlations are on the 45 degree angle lines between the variables and indicate causality if significant differences occur between these two values as described in Chapter 3.

The partial correlations for the test of hypothesis 1 are presented in Figure 8. The autocorrelations (.423, .597) indicate that the variables are reasonably stable between time 1 and time 2. The synchronous correlations (.419, .148) differ significantly which requires that the cross-lagged correlations be corrected. It should be noted that the synchronous correlations have been deflated because the initial level of trust has been partialled out in all of these analyses. The corrected cross-lagged correlations show support for hypothesis 1 because $r_{x_1y_2}$ (.326) is significantly

larger than $r_{y_1x_2}$ (.015). Thus, it can be concluded that trust in supervision is causally related to how a manager or professional will assess the usefulness and satisfaction with MBO in regard to their jobs.

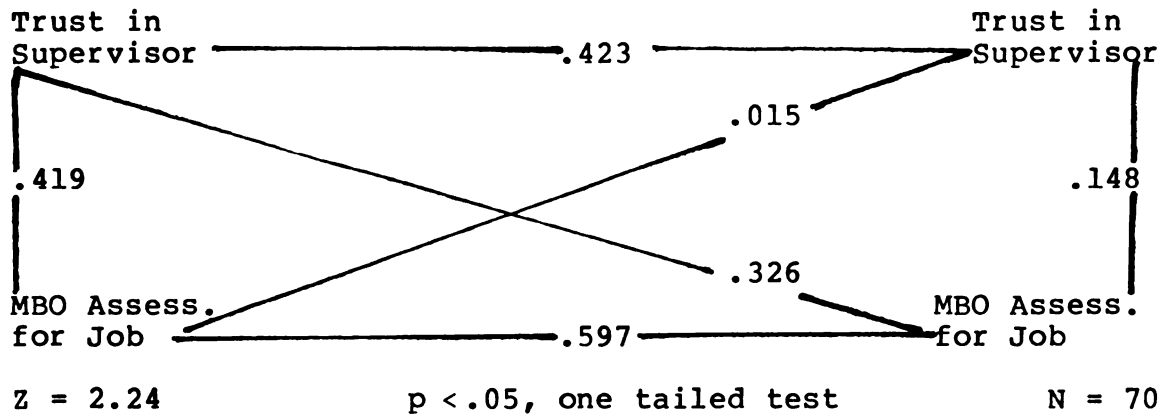


Figure 8. Cross-lagged Correlation Panel for Trust in Supervisor and the MBO Assessment for the Individual Job.

The correlations for the test of hypothesis 2 are presented in Figure 9. The autocorrelations (.423, .432) indicate that the variables are reasonably stable between time 1 and time 2. The synchronous correlations (.134, .163) do not differ significantly so correction of the cross-lagged correlations is not required. The cross-lagged correlations show support for hypothesis 2 because $r_{x_1y_2}$ (.286) is significantly larger than $r_{y_1x_2}$ (.120). Thus, it can be concluded that trust in supervisor is causally related to how managers and professionals will assess the impact that MBO has had on the organization.

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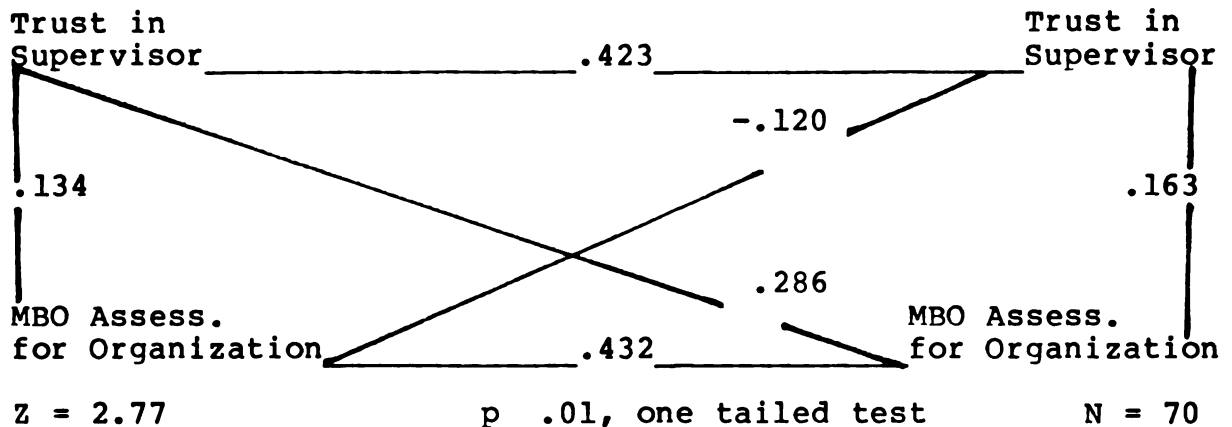


Figure 9. Cross-lagged Correlation Panel for Trust in Supervisor and the MBO Assessment for the Organization.

The correlations for the test of hypothesis 4 are presented in Figure 10. The autocorrelations (.335, .441) are somewhat lower but are still significant at .001. The synchronous correlations (.242, .350) do not differ significantly so correction of the cross-lagged correlations is not required. The cross-lagged correlations show support for hypothesis 4 because $r_{x_1y_2}$ (.285) is significantly larger than $r_{y_1x_2}$ (-.051). Thus, it can be concluded that trust in management is causally related to how managers and professionals will assess the usefulness and satisfaction with MBO in regards to their jobs.

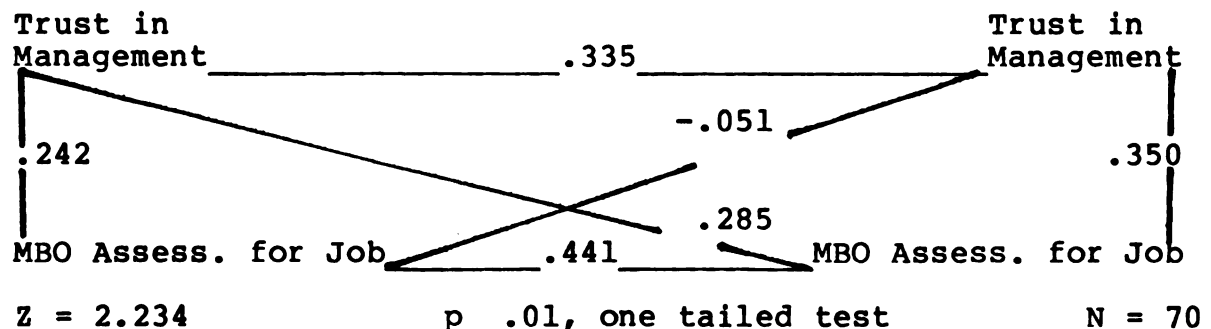


Figure 10. Cross-lagged Correlation Panel for Trust in Management and the MBO Assessment for the Individual's Job.

The correlations for the tests of hypothesis 5 are presented in Figure 11. The autocorrelations (.335, .325) indicate that the variables are reasonably stable between time 1 and time 2. The synchronous correlations (.083, .368) differ significantly which requires that the cross-lagged correlations be corrected. The corrected cross-lagged correlations show support for hypothesis 5 because $r_{x_1y_2}$ (.176) is significantly larger than $r_{y_1x_2}$ (-.133). Thus, it can be concluded that trust in management is causally related to how managers and professionals will assess the usefulness of MBO and their satisfaction with MBO as it relates to their jobs.

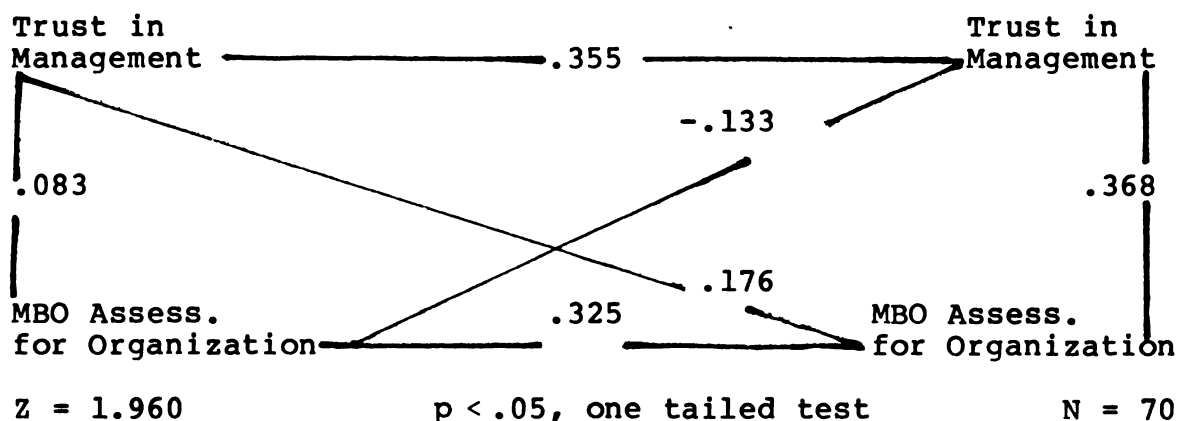


Figure 11. Cross-lagged Correlation Panel for Trust in Management and the MBO Assessment for the Organization.

The correlations for the test of hypothesis 7 are presented in Figure 12. The autocorrelations (.515, .472) indicate that the variables are reasonably stable between time 1 and time 2. The synchronous correlations (.088, .234) differ significantly which requires that the cross-lagged correlations be corrected. The corrected cross-lagged

• $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$

• $\frac{1}{2} \times \frac{1}{4} = \frac{1}{8}$

• $\frac{1}{4} \times \frac{1}{4} = \frac{1}{16}$

• $\frac{1}{4} \times \frac{1}{8} = \frac{1}{32}$

• $\frac{1}{8} \times \frac{1}{8} = \frac{1}{64}$

• $\frac{1}{8} \times \frac{1}{16} = \frac{1}{128}$

• $\frac{1}{16} \times \frac{1}{16} = \frac{1}{256}$

• $\frac{1}{16} \times \frac{1}{32} = \frac{1}{512}$

• $\frac{1}{32} \times \frac{1}{32} = \frac{1}{1024}$

• $\frac{1}{32} \times \frac{1}{64} = \frac{1}{2048}$

• $\frac{1}{64} \times \frac{1}{64} = \frac{1}{4096}$

• $\frac{1}{64} \times \frac{1}{128} = \frac{1}{8192}$

• $\frac{1}{128} \times \frac{1}{128} = \frac{1}{16384}$

• $\frac{1}{128} \times \frac{1}{256} = \frac{1}{32768}$

• $\frac{1}{256} \times \frac{1}{256} = \frac{1}{65536}$

• $\frac{1}{256} \times \frac{1}{512} = \frac{1}{131072}$

• $\frac{1}{512} \times \frac{1}{512} = \frac{1}{262144}$

• $\frac{1}{512} \times \frac{1}{1024} = \frac{1}{524288}$

• $\frac{1}{1024} \times \frac{1}{1024} = \frac{1}{1048576}$

• $\frac{1}{1024} \times \frac{1}{2048} = \frac{1}{2097152}$

• $\frac{1}{2048} \times \frac{1}{2048} = \frac{1}{4194304}$

• $\frac{1}{2048} \times \frac{1}{4096} = \frac{1}{8388608}$

• $\frac{1}{4096} \times \frac{1}{4096} = \frac{1}{16777216}$

• $\frac{1}{4096} \times \frac{1}{8192} = \frac{1}{33554432}$

• $\frac{1}{8192} \times \frac{1}{8192} = \frac{1}{67108864}$

• $\frac{1}{8192} \times \frac{1}{16384} = \frac{1}{134217728}$

• $\frac{1}{16384} \times \frac{1}{16384} = \frac{1}{268435456}$

• $\frac{1}{16384} \times \frac{1}{32768} = \frac{1}{536870912}$

• $\frac{1}{32768} \times \frac{1}{32768} = \frac{1}{1073741824}$

• $\frac{1}{32768} \times \frac{1}{65536} = \frac{1}{2147483648}$

• $\frac{1}{65536} \times \frac{1}{65536} = \frac{1}{4294967296}$

• $\frac{1}{65536} \times \frac{1}{131072} = \frac{1}{8589934592}$

• $\frac{1}{131072} \times \frac{1}{131072} = \frac{1}{17179869184}$

• $\frac{1}{131072} \times \frac{1}{262144} = \frac{1}{34359738368}$

• $\frac{1}{262144} \times \frac{1}{262144} = \frac{1}{68719476736}$

• $\frac{1}{262144} \times \frac{1}{524288} = \frac{1}{137438953472}$

• $\frac{1}{524288} \times \frac{1}{524288} = \frac{1}{274877906944}$

• $\frac{1}{524288} \times \frac{1}{1048576} = \frac{1}{549755813888}$

• $\frac{1}{1048576} \times \frac{1}{1048576} = \frac{1}{1099511627776}$

• $\frac{1}{1048576} \times \frac{1}{2097152} = \frac{1}{2199023255552}$

• $\frac{1}{2097152} \times \frac{1}{2097152} = \frac{1}{4398046511104}$

• $\frac{1}{2097152} \times \frac{1}{4194304} = \frac{1}{8796093022208}$

• $\frac{1}{4194304} \times \frac{1}{4194304} = \frac{1}{17592186044416}$

• $\frac{1}{4194304} \times \frac{1}{8388608} = \frac{1}{35184372088832}$

• $\frac{1}{8388608} \times \frac{1}{8388608} = \frac{1}{70368744177664}$

• $\frac{1}{8388608} \times \frac{1}{16777216} = \frac{1}{140737488355328}$

• $\frac{1}{16777216} \times \frac{1}{16777216} = \frac{1}{281474976710656}$

• $\frac{1}{16777216} \times \frac{1}{33554432} = \frac{1}{562949953421312}$

• $\frac{1}{33554432} \times \frac{1}{33554432} = \frac{1}{1137374883553280}$

• $\frac{1}{33554432} \times \frac{1}{67108864} = \frac{1}{2274749767106560}$

• $\frac{1}{67108864} \times \frac{1}{67108864} = \frac{1}{4549499534213120}$

• $\frac{1}{67108864} \times \frac{1}{134217728} = \frac{1}{9098999068426240}$

• $\frac{1}{134217728} \times \frac{1}{134217728} = \frac{1}{18197998136852480}$

• $\frac{1}{134217728} \times \frac{1}{268435456} = \frac{1}{36395996273704960}$

• $\frac{1}{268435456} \times \frac{1}{268435456} = \frac{1}{72791992547409920}$

• $\frac{1}{268435456} \times \frac{1}{536870912} = \frac{1}{145583985094819840}$

• $\frac{1}{536870912} \times \frac{1}{536870912} = \frac{1}{291167970189639680}$

• $\frac{1}{536870912} \times \frac{1}{1073741824} = \frac{1}{582335940379279360}$

• $\frac{1}{1073741824} \times \frac{1}{1073741824} = \frac{1}{1164671880758558720}$

• $\frac{1}{1073741824} \times \frac{1}{2147483648} = \frac{1}{2329343761517117440}$

• $\frac{1}{2147483648} \times \frac{1}{2147483648} = \frac{1}{4658687523034234880}$

• $\frac{1}{2147483648} \times \frac{1}{4294967296} = \frac{1}{9317375046068469760}$

• $\frac{1}{4294967296} \times \frac{1}{4294967296} = \frac{1}{18634750092136939520}$

• $\frac{1}{4294967296} \times \frac{1}{8589934592} = \frac{1}{37269500184273879040}$

• $\frac{1}{8589934592} \times \frac{1}{8589934592} = \frac{1}{74539000368547758080}$

• $\frac{1}{8589934592} \times \frac{1}{17179869184} = \frac{1}{149078000737095516160}$

• $\frac{1}{17179869184} \times \frac{1}{17179869184} = \frac{1}{298156001474191032320}$

• $\frac{1}{17179869184} \times \frac{1}{35359738368} = \frac{1}{596312002948382064640}$

• $\frac{1}{35359738368} \times \frac{1}{35359738368} = \frac{1}{1192624005896764129280}$

• $\frac{1}{35359738368} \times \frac{1}{707194767373552258560}$

• $\frac{1}{707194767373552258560} \times \frac{1}{707194767373552258560} = \frac{1}{500000000000000000000000}$

• $\frac{1}{707194767373552258560} \times \frac{1}{1414389534747104517120}$

• $\frac{1}{1414389534747104517120} \times \frac{1}{1414389534747104517120} = \frac{1}{2000000000000000000000000}$

• $\frac{1}{1414389534747104517120} \times \frac{1}{2828779069494209034240}$

• $\frac{1}{2828779069494209034240} \times \frac{1}{2828779069494209034240} = \frac{1}{8000000000000000000000000}$

• $\frac{1}{2828779069494209034240} \times \frac{1}{5657558138988418068480}$

• $\frac{1}{5657558138988418068480} \times \frac{1}{5657558138988418068480} = \frac{1}{32000000000000000000000000}$

• $\frac{1}{5657558138988418068480} \times \frac{1}{11315116277976836136960}$

• $\frac{1}{11315116277976836136960} \times \frac{1}{11315116277976836136960} = \frac{1}{128000000000000000000000000}$

• $\frac{1}{11315116277976836136960} \times \frac{1}{22630232555953672273920}$

• $\frac{1}{22630232555953672273920} \times \frac{1}{22630232555953672273920} = \frac{1}{512000000000000000000000000}$

correlations did not show support for hypothesis 7 because $r_{x_1y_2}$ ($-.020$) and $r_{y_1x_2}$ ($-.040$) were not significantly different. As a result, a causal linkage between trust in the MBO consultant and the assessed effect of MBO on the job of professionals and managers could not be empirically established.

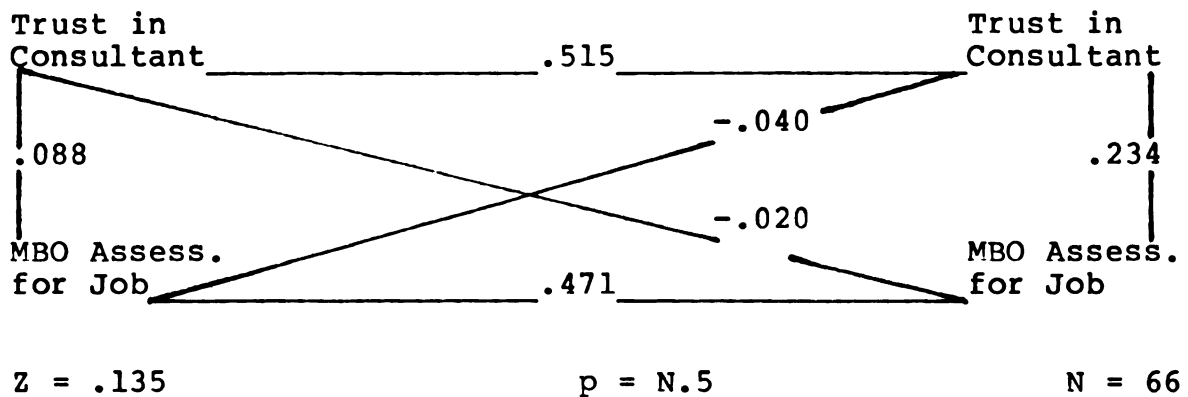


Figure 12. Cross-lagged Correlation Panel for Trust in MBO Consultant and the MBO Assessment for the Individual's Job.

The correlations for the test of hypothesis 8 are presented in Figure 13. The autocorrelations ($.515$, $.345$) indicate that the variables are reasonably stable between time 1 and time 2. The synchronous correlations ($-.054$, $.283$) differ significantly which requires that the cross-lagged correlations be corrected. The corrected cross-lagged correlations did not show support for hypothesis 8 because $r_{x_1y_2}$ ($.170$) and $r_{y_1x_2}$ ($-.030$) were not significantly different. As a result, a causal linkage between trust in the MBO consultant and the assessed impact of MBO on the organization could not be established.

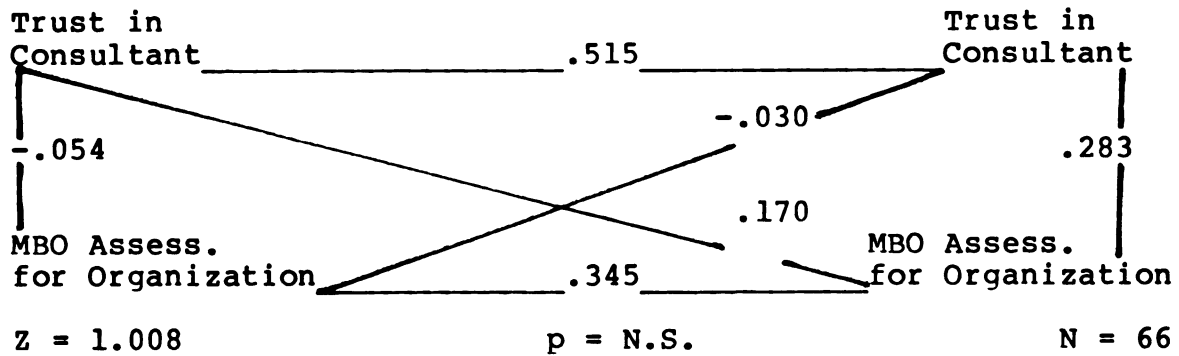


Figure 13. Cross-lagged Correlation Panel for Trust in MBO Consultant and the MBO Assessment for the Organization.

As was discussed in detail in Chapter 3, there are several limitations with cross-lagged correlational analysis. First, this analysis did not rule out the possibility that decreases in the MBO assessment caused increases in supervisor and management trust. Although it was argued that theory and previous research precluded this alternative interpretation, empirical evidence also suggests that such an interpretation is not feasible. The fact that the synchronous correlations are positive and the mean scale values reported in Table 10 show a positive increase between time 2 and 3, support the conclusion that a positive relationship exists between the variables as hypothesized.

The second problem with cross-lagged correlational analysis is the effect that inconsistent relationships between two variables over time can have on the analysis. This problem occurs frequently and is evident when synchronous correlation differ significantly. The procedure outlined by Kenny (1975) was used to correct the cross-lagged correlations to alleviate this problem.

TABLE 10

AMOUNT AND DIRECTION OF CHANGE IN MEAN SCALE VALUES

(One Tailed Test)

Scale	Mean t_2	Mean t_3	Difference	t
1	2.49	2.64	.15	.202**
2	-----	-----	---	-----
3	2.67	2.80	.13	-1.62**
4	2.14	2.18	.04	.73
5	2.58	2.64	.06	.85
6	2.17	2.38	.21	4.01*

*p > .001

**p > .05

The final limitation of cross-lagged analysis is its inability to rule out the possibility of a third variable causing the two variables to covary. The dynamic correlations reported in Table 11 were computed to determine if this were a possibility.

TABLE 11
DYNAMIC PARTIAL CORRELATION COEFFICIENTS*

Trust in:	MBO Assessment for Job	MBO Assessment for Organization
Supervisor	.24 (.02)	.16 (.09)
Management	.30 (.01)	.30 (.00)
MBO Consultant	.265 (.01)	.17 (.08)

Although the dynamic correlations indicated significant relationships between the variable, they were not sufficiently strong to rule out the possibility that a third variable caused the results that were evident in the cross-lagged correlational analysis.

Summary

The results of this study indicated quite strongly that trust in supervision and trust in management were causally

*Note that the correlations are deflated because initial levels of trust (time 1) were

Figure 1. The effect of the concentration of the inhibitor on the rate of polymerization of α -methylstyrene in the presence of SnCl_4 at 25°C .

related to the assessed value of MBO for the individuals job and for the organization as a whole. No such causal relationship was found between trust in the MBO consultant and the assessed impact of MBO. However, this does not mean a causal relationship does not exist as will be discussed in the next chapter.

In this analysis dynamic correlations were computed to determine if a third variable could be causing the significant relationships between trust and the MBO assessment. However, the relationship indicated between the change scores (dynamic correlations) were not sufficiently large to rule out this possibility.

CHAPTER V

FINDINGS AND CONCLUSIONS

Introduction

The results described in Chapter IV are discussed in the present chapter. The first section is a general discussion of the findings and the conclusions that can be drawn from the data. The second section is an examination of the weaknesses that are inherent in this study. The third section describes how managers could use these findings. Recognizing that no one piece of research represents a final or conclusive answer, the last section is a discussion of directions for future research.

Discussion of Findings

The objective of this study was to determine the causal relationship between interpersonal trust and the successful installation of MBO. It should be reiterated that this study does not attempt to determine if MBO influences organizational effectiveness or managerial performance. The positive influence of MBO was assumed and the research problem of concern here was the successful installation of MBO. The hypotheses were designed to address competing theoretical arguments. Does trust determine the success of MBO program; or does the installation of MBO program have a primary

influence on trust within the organization? Upon examining the theoretical and empirical literature related to this question, a model (see Figure 4) was constructed to represent what the investigator thought was the most likely causal relationship. In this model, trust was conceived of as a multi-dimensional variable that would have the predominate effect on the MBO installation. This was not to preclude the fact that MBO would also influence trust. However, because other factors also had a substantial effect on trust, MBO would exert a minor influence on trust especially since data collection and MBO installation were over a relatively short period of time.

In this study trust was treated as having three separate dimensions because the supervisor, management and the MBO consultant were believed to have distinctly different roles and influences on the MBO installation. As a result, each of the dimensions were analyzed separately. The dependent variable was a three dimensional assessment of the MBO program by the managers, supervisors and professionals of the organization. This three dimensional assessment included MBO benefits to the participants' own job, its benefits as a supervisory tool,* and the benefits of MBO for the organization as a whole. The basic assumption in this test of the model, is that the level of trust is going to vary naturally between people; and that a variation in trust is going to have a differential influence on the effectiveness of MBO for a person's own job and also

*This dimension was later excluded because it posed measurement problems as discussed.

result in different perceptions of the effect of MBO on the total organization. For instance, a person who trusts his supervisor, management, and the MBO consultant will find MBO a more effective tool for discharging his duties, and will have a more positive perception about its effects on the organization as a whole than an individual who reports lower levels of trust. Based on this model, it was hypothesized that trust in the supervisor, management and the consultant will be causally related to both assessments of the MBO program.

The results of this study report the hypotheses (1, 2, 4 and 5) that trust in supervision and in management determines how managers, supervisor and professionals will assess MBO. In other words, during the installation, positive perceptions about the use of MBO do not cause a significant increase in supervisor or management trust. To better evaluate these findings, note that Kenny (1975) has found cross-lagged correlational analysis to be a low power test, significance levels of .05 and below indicate that the support for these hypotheses is very great indeed. However, the interpretation of the causal relationship is weakened because the dynamic correlations were not strong enough to rule out the possibility that these findings could have been caused by some third variable. These results must be qualified by the fact that the data was collected over a six month installation period. Given a longer time period a successful MBO program could have a significant effect on trust. This conclusion is indicated by the positive although insignificant shift in the mean values

of trust between time 2 and time 3. Furthermore, this interpretation is congruent with organizational development (OD) theorists (Huse, 1975; Raia, 1972) who predict that organizational interventions have long term impact and, in fact, have suggested that results from such interventions will not be realized for several years (3-5).

Although significant correlations were found between trust in the MBO consultant and the two MBO assessments, the causal relationship between trust in the MBO consultant and the MBO installation were not supported by cross-lagged analysis. Despite this lack of confirmation, a relationship between the two variables is not disproved as discussed in Chapter 2. The investigator interprets the lack of a significant relationship to be due to an interaction effect for two reasons. First, the MBO consultant was not known by most organization members and thus, they did not have an experience based upon which to found a perception of trust. However, once they had interactions with the consultant, as he installed the program they had an opportunity to hear from others or observe directly the extent to which the consultant acted in a trustworthy manner. Because their perceptions of trust developed in conjunction with the installation of the MBO program, an interaction effect occurred which washed out any significant results that could be attributed to either variable by cross-lagged correlational analysis. This interpretation of data is partially supported by large and significant (.001) positive shifts of the mean values in

consultant trust. Neither trust in supervisor nor trust in management increased significantly

To a limited extent this study provides a test of Patten's (1972) model for instituting a MBO system discussed in Chapter I. It is Patten's (1972) contention that organization development should be used to remove emotional blockages, i.e., low trust, prior to instituting an MBO system. Then, once the MBO system is installed rewards and punishments should be designed to reinforce its use. Although trust levels were not manipulated in this study, supervisory and management trust were found to be causally related to the assessment of MBO. However, more recently Patten (1977) has given more emphasis to MBO as a device for building trust. This study does not support this reformulation of the causal order, at least not during installation of MBO to extent measured in this study as of time 3.

This research also supports the conclusions shown by Hollmann (1976) that a supportive climate (trust being an aspect of climate) is conducive to the successful installation of MBO. In fact, this study was a natural extension of his research in that Hollmann's correlational analysis determined that a relationship existed and based on these results, he proposed a causal order which this research confirmed.

A more general, but certainly more speculative conclusion can be drawn from these findings. If the MBO installation can be thought of as an example of a major management intervention, then these findings would suggest that trust is an

important determinant to the success of such interventions. Provided this were true, management would be well advised to actively monitor and maintain trust at levels that facilitate major management interventions that must occur periodically as organizations adapt to change. This more general interpretation of the data is consistent with Lawler's (1969) contention that trust is instrumental in the successful implementation of a compensation program.

Another consideration is the effect that the intervention may have on trust levels in the organization. This investigator argued that this MBO intervention was proceeding successfully* and trust levels increased although not significantly for supervision and management. What would have happened if this intervention had been unsuccessful? Unsuccessful management interventions are seldom reported and this investigator is aware of only one such study, where trust levels are measured. As discussed previously, Keller (1978) reported that trust levels fell when a poorly designed "managerial grid" program was instituted. In fact, management finally terminated the contract before the system was completely installed. Thus given an N of 2, one could conclude that a program to improve managerial capabilities can, if successful, build trust but will erode it if the intervention is unsuccessful.

*This determination of success is based on observations of the investigator, comments made by top management and the MBO consultant, and the mean values of the MBO assessment scales in the questionnaire.

Finally, this study provides support for utilizing situational trust measures. Although the three dimensions of trust were significantly correlated, these dimensions were not uniformly related to the dependent variable. Supervisory and management trust were shown to be causally related to the assessment of MBO, however, no such causal relationship was evident between MBO consultant trust and the MBO assessment. The construct analysis of these scales gave further evidence that people perceived these dimensions as distinct.

Weaknesses of the Study

It should be recognized that the analytical procedures used and the field location where the data were collected reduces the generalizability of these findings. Although causal relationships between supervisory and managerial trust and the assessment of the MBO program have been inferred, the analytical procedures used do not rule out the possibility that other independent variables may affect how MBO is assessed. In addition, because these independent variables have not been identified one cannot determine how much they would contribute to the explanation of the variance in the dependent variable.

Another basic kind of limitation is that these analytical procedures cannot prove causality. The confidence in these techniques must be tempered by the realization that certain basic assumptions have had to be made as previously discussed and there are certain weaknesses in the methodology. Only to

the extent that the attributes of the data are congruent with these assumptions can the analytical procedures be considered appropriate.

The measure of the MBO assessment poses another limitation for this data. Although perceptions of managers and professionals are probably meaningful, they were not corroborated by independent observation. If, indeed, trust does affect the utilization of MBO, then other more quantifiable measures should be influenced. Some of these alternative measures might be:

- 1) The quality of objectives written down between superiors and subordinate could be assessed by the investigator against the ideal model proposed in Chapter I.
- 2) The frequency that subordinates achieved established objectives would be an indicator of how realistic the goals were and/or the support the subordinate received.
- 3) The amount of agreement between the superior and subordinate about what the objectives mean could constitute an indication as to whether communications had been open-flows of information.
- 4) Actual productivity data could also be an indicator of the quality of the goal setting process. Trust levels should reflect directly on managerial effectiveness in getting the job done if it facilitates the MBO process.

Not only would these other measures provide an alternative check of the relationship between trust and MBO, they would also provide more specific information on how trust affects

the MBO process.

Tosi et al., (1976) identifies another possible limitation inherent in cross-lagged and dynamic correlational analysis, that rely on two points in time data. They describe how error of measurement and error produced by transient factors could be responsible for the apparent change in the variables. For instance, a transient factor such as a "good mood" or "bad mood" of the participant on any given day can be the result of a multitude of factors such as personal finances, health, family situation, arguments with one's supervisor, and/or a traffic jam experienced on the way to work. In that these factors create different moods from day to day and because mood can effect attitudes, a person's response to questionnaire may differ from one day to the next. To overcome this limitation Tosi et al., (1976) makes a correction that requires 3 points in time data which is discussed in more detail in their article.

Finally, the time lag between data points can influence the results. In this study the data were collected over a six month period. Given the fact that trust had increased, a longer lag time could have changed the causal relationships that were evident in this study. This particular problem is common in most longitudinal research in that the researcher often does not have a theoretical basis for determining when the data should be collected and what the lag period should be. Additional research with a different time lag interval is needed to discover how time affects the relationship between

trust and MBO.

In addition to the basic limitations imposed by the analytical procedures, the generalizability of the data is affected by the field location. If that data were collected from only one organization, it must be realized that the industry, the inner city location, the exclusion of women from the study and the other factors which made this organization unique could have affected the causal relationships discovered. Only replications in diverse organizations can determine if the effects are consistent in other situations or if moderating factors exist.

Applications

The results from this study have several applications for management and consultants. The most obvious is the realization that trust is going to affect the installation and perceived success of MBO. In fact, managers and consultants would be advised not to install an MBO program if trust levels are particularly low. This advice assumes that trust levels are monitored prior to an MBO installation and that there are ways to move trust up to levels where MBO would be a functional management strategy. Measuring trust seems to be less of a problem than affecting changes in trust. Kegan (1972) has found properly utilized sensitivity training will increase trust. Patten (1972) recommends team building and Gibb (1978) suggests trusting behavior on the part of management will increase trust on the part of employees. Although the

methods for enhancing trust in the organizational context are somewhat diverse, the common element seemed to be increased interpersonal communications and interaction in what OD change agents would term a "safe environment."

A more general application also seem to be logical extension of these findings. High trust levels could well facilitate other type of management interventions as well as a MBO installation. Thus, it would seem desirable that management practices and politics be designed in such a way as to enhance trust so that a conducive climate for organization change would be maintained for future managerial interventions. In fact, the MBO process could well be a means of maintaining trust at high levels. Although trust in management or supervision did not increase significantly during this study, trust did move in the right direction. Furthermore, Keller's (1978) finding that trust was decreased by poorly installed and later aborted managerial grid (intervention) should be noted. A well designed and properly installed intervention can enhance trust but a poorly conceived one that fails can decrease trust. This should be a consideration when management is making the decision to adopt or fund a managerial intervention.

Future Research

The first and most obvious need is to replicate the present study in other organizations with different time lag intervals as discussed. Kenny (1975) states:

"Ideally a cross-lagged difference should be replicated across (a) different time-lags, (b) different groups of subjects and (c) different operationalizations of the same construct." (p. 894).

Next, this line of correlational causal research should be pursued in order to identify other variables which contribute to the success of MBO. Hollmann's (1973) research would certainly justify examining other dimensions of climate as possible factors which influence the success of MBO. Once these variables can be identified and measured, then regression analysis can be utilized to determine how much each contributes toward the success of MBO.

A major question that this research has left unanswered is what level of trust is adequate for installing MBO. Although authors talk in terms of an adequate level of trust, as yet no empirical research addresses this issue (Patten, 1972; Porter et al., 1975; and Hollmann, 1976). Consequently, replicating this research under varying degrees of trust, would be highly desirable. One possible research strategy would be to obtain access to an organization which has geographically dispersed organization units such as Sears retail outlets or branches of a large bank. In this situation, MBO could be installed in similar organizations but ones that may have different trust levels. If the investigator were more ambitious, he might attempt to manipulate trust*

*This manipulation would probably be limited by management to positive attempts to increase trust because most managers would be unwilling to reduce trust levels among their subordinates.

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in these organizations by utilizing sensitivity training or team building in certain locations before the MBO installation.

Another major avenue for research is the discovery and verification of methods for increasing trust within the organization. Although Kegan (1972) and Friedland (1968) have done some research with sensitivity training, team building has not been tested as a method for increasing trust. If researchers and theorists are going to recommend that MBO not be installed under conditions of low trust, then managers and consultants are going to ask for prescriptive methods of increasing trust to levels where MBO can be installed successfully.

French (1974) has suggested that a collaborative approach to MBO will have better results than conventional MBO.* If this is so, it would seem desirable to examine trust in work groups as a possible causal influence in the success of a MBO program which utilizes a team approach.

Finally, because this research was prompted by the failures of MBO to become a viable management strategy within organizations, research on variables that are causally related to maintaining MBO systems would be an important avenue of research. Patten (1972) has proposed that reward and penalty system should be installed to reinforce behaviors that are

*For a description of what a team approach to MBO would be like, see Wendell French. The Personnel Management Process. Fourth Edition. Boston Houghton Mifflin Company, 1978, 321-329.

critical to the MBO process. In a 1976 article he outlined a compensation system which integrated MBO and salary administration. Whether this system is more motivationally sound than conventional merit pay system has not been empirically tested. However, in related research (n=2) Ivancevich (1974) found that a MBO program which incorporated reinforcement programs retained its viability longer than a MBO program without reinforcement. It would seem that not only compensation but also other personal systems could be designed to be consistent with MBO and reinforce the appropriate behavior from organization members.

Conclusion

In conclusion, empirical investigations of determinants of a successful MBO installation are almost non-existent. Given the limitations of this study, several contributions can be noted. First, it can now be asserted with reasonable confidence that trust in supervision and management are causally related to assessed successfulness of MBO. However, there was little support for the same linkage between the MBO consultant and assessed MBO success. Second, these causal relationships lend support to the notion that a successful management installation can maintain and possibly enhance trust in the long run. Finally, trust has been shown to be an important variable in the organizational setting. Yet, like most research endeavors, more questions seem to be identified than are answered. The influence of trust in managerial processes is certainly a fertile area for future research.

APPENDIX A
QUESTIONNAIRE USED IN TIME 1

MICHIGAN STATE UNIVERSITY

SCHOOL OF LABOR AND INDUSTRIAL RELATIONS
SOUTH KEDZIE HALL

EAST LANSING • MICHIGAN • 48824

RESEARCH SURVEY

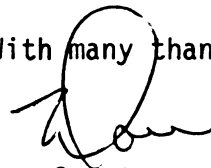
As a Ph.D. candidate in the School of Labor and Industrial Relations at Michigan State University, I am studying the attitudes employees have about supervision and work. I am asking you to help me in my research by filling out this questionnaire. For my research to accurately assess employee opinion your participation is important.

More than two hundred people are going to be asked to respond to this questionnaire. No questionnaire will be studied individually; all will be combined into statistical tables for analysis. Let me assure you that your response will be strictly confidential. Neither management, the consultants, nor anyone else in your department or company will ever see your completed questionnaire or have access in any way to the answers you as an individual give.

Please complete the questionnaire and place it in the attached envelope. I will personally collect your questionnaires. I will be available to answer any questions or discuss any concerns you may have about this questionnaire.

Your cooperation in answering all of the questions will be very much appreciated.

With many thanks,

A handwritten signature in black ink, appearing to read 'Dow Scott', written over the printed name.

Dow Scott
Michigan State University

Here are some statements which describe how employees might feel about supervision and work. Please indicate your agreement or disagreement. For each statement please circle the number to indicate whether you:

- 1 -- STRONGLY AGREE
- 2 -- AGREE
- 3 -- NEUTRAL
- 4 -- DISAGREE
- 5 -- STRONGLY DISAGREE

Circle one and only one answer for each statement. There are no right or wrong answers to these questions. Just tell how you personally feel.

THIS SET OF QUESTIONS REFERS TO YOUR IMMEDIATE SUPERVISOR. THIS IS THE PERSON TO WHOM YOU DIRECTLY REPORT AND ARE CURRENTLY RESPONSIBLE TO. BE SURE TO THINK OF A PARTICULAR PERSON WHEN ANSWERING THE FOLLOWING QUESTIONS.

	<u>Strongly Agree</u>	<u>Agree</u>	<u>Neutral</u>	<u>Disagree</u>	<u>Strongly Disagree</u>
1. I feel free to discuss work problems with my immediate supervisor without fear of having it used against me later.	1	2	3	4	5
2. When my immediate supervisor makes decisions which seem to be against my best interests, I believe these decisions are justified by other considerations.	1	2	3	4	5
3. I have complete trust that my immediate supervisor will treat me fairly.	1	2	3	4	5
4. My immediate supervisor seldom keeps the promises he/she makes.	1	2	3	4	5
5. If I make a mistake my supervisor is willing to "forgive and forget."	1	2	3	4	5
6. If I make a decision, my supervisor will back me up.	1	2	3	4	5
7. The information that I receive from my supervisor is usually accurate and complete.	1	2	3	4	5
8. My supervisor is friendly and approachable.	1	2	3	4	5
9. I can count on my immediate supervisor for help if I have difficulties with my job.	1	2	3	4	5

THIS SET OF QUESTIONS REFERS TO THE WORK UNIT OR WORKGROUP TO WHICH YOU BELONG. THE MEMBERS OF YOUR WORKGROUP ARE THOSE PEOPLE WHO REPORT DIRECTLY TO THE SAME SUPERVISOR THAT YOU DO.

	<u>Strongly Agree</u>	<u>Agree</u>	<u>Neutral</u>	<u>Disagree</u>	<u>Strongly Disagree</u>
10. There is a destructive competitiveness among members of my workgroup.	1	2	3	4	5
11. Members in my workgroup are willing to compromise so that the group may agree.	1	2	3	4	5
12. There are too many personal opinions raised at our meetings as opposed to the broader point of view.	1	2	3	4	5
13. There is trust in one another among members of my workgroup.	1	2	3	4	5
14. Conflict frequently occurs in my workgroup.	1	2	3	4	5
15. I can share sensitive information with members of my workgroup because I know group members will hold it in strict confidence.	1	2	3	4	5
16. I have complete trust that members of my workgroup will treat me fairly.	1	2	3	4	5
17. I can rely on members of my workgroup to help me if I have difficulties getting the job done.	1	2	3	4	5
18. If I make a mistake, members of my workgroup are willing to "forgive and forget."	1	2	3	4	5
19. Information I get from members of my workgroup is usually accurate and complete.	1	2	3	4	5

THIS SET OF QUESTIONS REFERS TO THE MANAGEMENT OF D.O.T. THESE ARE THE PEOPLE WHO MAKE POLICIES, RULES AND MAJOR DECISIONS FOR D.O.T.

	<u>Strongly Agree</u>	<u>Agree</u>	<u>Neutral</u>	<u>Disagree</u>	<u>Strongly Disagree</u>
20. Management has little regard for the well being of people who work for this organization.	1	2	3	4	5
21. At D.O.T., management cannot be trusted.	1	2	3	4	5
22. When management must make DECISIONS which seem to be against the best interests of the employee, I believe that management's decisions are justified by other considerations.	1	2	3	4	5
23. When management makes POLICIES OR RULES which seem to be against the best interests of the employees, I believe that these rules or policies are justified by other considerations.	1	2	3	4	5
24. All things considered, I have trust that management will treat me fairly.	1	2	3	4	5
25. Management seldom follows through with what they say they are going to do.	1	2	3	4	5

THIS SET OF QUESTIONS REFERS TO THE MBO (MANAGEMENT-BY-OBJECTIVES) CONSULTANTS WHO ARE HELPING TO ESTABLISH THIS PROGRAM.

	<u>Strongly Agree</u>	<u>Agree</u>	<u>Neutral</u>	<u>Disagree</u>	<u>Strongly Disagree</u>
26. I feel free to discuss work problems with the MBO consultants without fear of having it used against me later.	1	2	3	4	5
27. In most cases, the MBO consultants are concerned about employee welfare.	1	2	3	4	5
28. It is best not to confide in consultants because the information you share is likely to be used against you.	1	2	3	4	5
29. The consultants who are implementing the MBO program can be trusted.	1	2	3	4	5

DURING THE NEXT 6 MONTHS YOU WILL BE ASKED TO FILL OUT 2 MORE SHORT QUESTIONNAIRES. TO ANALYZE THIS DATA I MUST BE ABLE TO COMPARE YOUR RESPONSES ON EACH OF THESE QUESTIONNAIRES. SO I CAN MAKE THIS COMPARISON BE SURE TO PLACE YOUR MOTHER'S MAIDEN NAME ON EACH QUESTIONNAIRE. YOUR MOTHER'S MAIDEN NAME DOES NOT APPEAR IN THE PERSONNEL RECORDS.

30. Mother's Maiden Name _____

THE REMAINING QUESTIONS ARE FACTUAL AND HAVE TO DO WITH YOUR EMPLOYMENT HISTORY. YOUR ANSWERS TO THE FACTUAL QUESTIONS ARE VERY IMPORTANT TO THE STUDY. PLEASE ANSWER AS FULLY AND CORRECTLY AS YOU CAN. LIKE THE REST OF YOUR ANSWERS, THIS INFORMATION WILL BE TREATED CONFIDENTIALLY.

31. When answering questions 1-9 about your current supervisor, you were thinking of a particular person. What is your supervisor's last name? _____ When did you start working for this person? _____ month _____ year
32. When were you employed by D.O.T.? _____ month _____ year
33. Division? _____
34. What is your sex? () Male () Female
35. What is your year of birth? _____

THANK YOU FOR THE TIME YOU HAVE TAKEN TO COMPLETE THIS QUESTIONNAIRE.
BEFORE RETURNING IT, BE SURE ALL QUESTIONS HAVE BEEN ANSWERED.

APPENDIX B
QUESTIONNAIRE USED FOR TIME 2 AND TIME 3

MICHIGAN STATE UNIVERSITY

SCHOOL OF LABOR AND INDUSTRIAL RELATIONS
SOUTH KEDZIE HALL

EAST LANSING • MICHIGAN • 48824

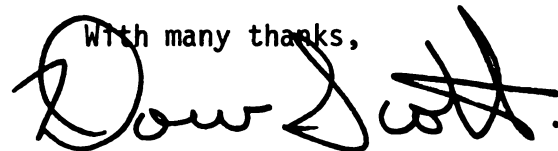
RESEARCH SURVEY

As a Ph.D. candidate in the School of Labor and Industrial Relations at Michigan State University, I am studying the attitudes employees have about supervision and work. I am asking you to help me in my research by filling out this questionnaire. For my research to accurately assess employee opinion your participation is important.

More than two hundred people are going to be asked to respond to this questionnaire. No questionnaire will be studied individually; all will be combined into statistical tables for analysis. Let me assure you that your response will be strictly confidential. Neither management, the consultants, nor anyone else in your department or company will ever see your completed questionnaire or have access in any way to the answers you as an individual give.

Please complete the questionnaire and place it in the attached envelope. I will personally collect your questionnaires. I will be available to answer any questions or discuss any concerns you may have about this questionnaire.

Your cooperation in answering all of the questions will be very much appreciated.

With many thanks,

Dow Scott
Michigan State University

Here are some statements which describe how employees might feel about the MBO (management-by-objectives) form of management. Please indicate your agreement or disagreement. For each statement please circle the appropriate number to indicate whether you:

- 1 -- STRONGLY AGREE
 2 -- AGREE
 3 -- NEUTRAL
 4 -- DISAGREE
 5 -- STRONGLY DISAGREE

Circle one and only one answer for each statement. There are no right or wrong answers to these questions. Just give your opinion.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. MBO is an effective way of planning and organizing the work for which I am responsible.	1	2	3	4	5
2. MBO provides an effective way of evaluating my work performance.	1	2	3	4	5
3. MBO motivates me to do the very best on my job.	1	2	3	4	5
4. MBO is an effective way of coordinating my work with that of other members of my immediate workgroup.	1	2	3	4	5
5. MBO results in good communication between me and my immediate supervisor.	1	2	3	4	5
6. MBO results in regular cooperation between me and my immediate supervisor.	1	2	3	4	5
7. All things considered, I am satisfied with MBO as it relates to my job.	1	2	3	4	5
8. The MBO program has <u>reduced</u> cooperation between divisions of DOT.	1	2	3	4	5
9. The MBO program has helped DOT solve some of its serious problems.	1	2	3	4	5
10. The MBO program has had <u>little effect</u> on DOT.	1	2	3	4	5
11. The MBO program has improved communications at DOT,	1	2	3	4	5
12. The MBO program has improved the coordination of efforts between divisions.	1	2	3	4	5

Answer Questions 13-19 only if you have direct supervisory responsibilities. If you do not have people reporting to you continue on question 20 on the next page.

13. MBO is an effective way of planning and organizing the work of my subordinates.	1	2	3	4	5
14. MBO is an effective way of evaluating the performance of my immediate subordinates.	1	2	3	4	5
15. MBO is an effective way of coordinating the work of my immediate subordinates.	1	2	3	4	5
16. MBO results in good communications between me and my immediate subordinates.	1	2	3	4	5
17. MBO results in regular cooperation between me and my immediate subordinates.	1	2	3	4	5
18. All things considered, I am satisfied with the MBO process in the supervision of my immediate subordinates.	1	2	3	4	5
19. All things considered, I think my immediate subordinates are satisfied with MBO as it relates to their jobs.	1	2	3	4	5

Here are some statements which describe how employees might feel about supervision and work. Please indicate your agreement or disagreement. For each statement please circle the number to indicate whether you:

		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
SUPERVISOR	20. I feel free to discuss work problems with my immediate supervisor without fear of having it used against me later.	1	2	3	4	5
	21. I have complete trust that my immediate supervisor will treat me fairly.	1	2	3	4	5
	22. If I make a mistake my supervisor is willing to "forgive and forget."	1	2	3	4	5
	23. My supervisor is friendly and approachable.	1	2	3	4	5
	24. I can count on my immediate supervisor for help if I have difficulties with my job.	1	2	3	4	5
WORK GROUP	25. There is trust in one another among members of my workgroup.	1	2	3	4	5
	26. I can share sensitive information with members of my workgroup because I know group members will hold it in strict confidence.	1	2	3	4	5
	27. I have complete trust that members of my workgroup will treat me fairly.	1	2	3	4	5
	28. I can rely on members of my workgroup to help me if I have difficulties getting the job done.	1	2	3	4	5
MANAGEMENT	29. Management has little regard for the well being of people who work for this organization.	1	2	3	4	5
	30. At DOT management <u>cannot</u> be trusted.	1	2	3	4	5
	31. When management must make decisions which seem to be against the best interests of the employee, I believe that management's decisions are justified by other considerations.	1	2	3	4	5
	32. Management seldom follows through with what they say they are going to do.	1	2	3	4	5
CONSULTANT	33. I feel free to discuss work problems with the MBO consultants without fear of having it used against me later.	1	2	3	4	5
	34. In most cases, the MBO consultants are concerned about employee welfare.	1	2	3	4	5
	35. It is best not to confide in consultants because the information you share is likely to be used against you.	1	2	3	4	5
	36. The consultants who are implementing the MBO program can be trusted.	1	2	3	4	5

To analyze this data I must be able to compare your responses on each of the questionnaires you have completed. So I can make this comparison, be sure to place your Mother's Maiden Name on each Questionnaire. Your Mother's Maiden Name does not appear in the Personnel Records.

37. Mother's Maiden Name: _____

The remaining questions are factual and have to do with your employment history. Your answers to the factual questions are very important to the study. Please answer as fully and correctly as you can. Like the rest of your answers, this information will be treated confidentially.

38. When answering questions 20-24 about your current supervisor, you were thinking of a particular person. What is your supervisor's last name? _____ When did you start working for this person? _____ month year

39. Your Race: () Black () Spanish American () Indian American
() White () Oriental American () Other

THANK YOU FOR THE TIME YOU HAVE TAKEN TO COMPLETE THIS QUESTIONNAIRE,
BEFORE RETURNING IT, BE SURE ALL QUESTIONS HAVE BEEN ANSWERED

APPENDIX C
SCHEDULE OF PROGRAM EVENTS

SCHEDULE OF PROGRAM EVENTS

		Phase I		Phase II		III		Phase IV		Phase V		Phase V and VII		1979								
SEQUENCE OF EVENTS/CALNDAR WEEKS		4/17	5/8	5/22	6/5	6/19	7/3	7/17	7/13	8/14	8/28	9/11	9/25	10/19	10/23	11/16	11/20	12/4	12/18	1/1	1/15	
No.	ACTIVITIES																					
I.0	<u>INTRODUCTORY BRIEFINGS</u>																					
I.1	Director																					
I.2	Executive Committee																					
I.3	Internal Consultant																					
II.0	<u>ORGANIZATION ANALYSIS/ NEEDS ASSESSMENT</u>																					
II.1	Verify Organizational Charts All Divisions																					
II.2	Design Survey and Interview Formats																					
II.3	Needs Analysis Schedule																					
II.4	Assessment Observations																					
II.5	M.B.O. Interviews																					
III.0	<u>NEEDS ASSESSMENT DATA ANALYSIS</u>																					
III.1	Data Review and Analysis																					
III.2	Presentation To Top Management																					
III.3	Need Summary as Training Input																					
<hr/>																						
No.	ACTIVITIES	4/17	5/8	5/22	6/5	6/19	7/3	7/17	7/13	8/14	8/28	9/11	9/25	10/19	10/12	11/16	11/20	12/4	12/18	1/1	1/15	
IV.0	<u>M.B.O. SESSION DEVELOPMENT</u>																					
IV.1	Training Rough Nominations Final																					
IV.2	Meeting Room Logistics Notebook Etc.																					
IV.3	Training Schedule Verified																					
IV.4	Develop Seminar Outlines																					
IV.5	Develop Notebook Materials																					
IV.6	Develop Workshops																					
IV.7	Develop Leader's Notebook																					
IV.8	Develop Tentative Asist Sessions																					
IV.9	Develop Tentative Time Management Program																					

SCHEDULE OF PROGRAM EVENTS (continued)

[illegible]

APPENDIX D
ITEM-SCALE CORRELATIONS

SCALE AND QUESTIONNAIRE ITEMS

Scale No.	Scale Name	<u>Questionnaire Items</u>	
		Time 1	Time 2 and 3
1	Assessment of MBO for own Job	Not measured	1-7
2	Assessment of MBO Impact on Entire Organization	Not measured	8-12
3	Assessment of MBO as a Supervisory Tool	Not measured	13-19
4	Trust in the Supervisor	Not measured	20-24
5	Trust in Management	20-25	29-32
6	Trust in the MBO Consultant	26-29	33-36

*The individual items are part of the revised questionnaire included in appendix B.

TABLE 12
ITEM-SCALE CORRELATION FOR TIME 1

1	2	3	4	5	6	7	8	9
.78	.58	.81	.64	.72	.72	.66	.70	.71
.28	.38	.35	.22	.25	.29	.32	.15	.30
.13	.28	.15	-.06	.08	.12	.18	.11	.24
20	21	22	23	24	25	26	27	28
29								
.28	.32	.21	.23	.31	.38	.11	-.11	.36
.18								
.82	.87	.67	.68	.59	.76	-.11	-.02	.36
.22	.19	.20	.19	.15	.06	.75	.67	.71
.76								

TABLE 13

ITEM-SCALE CORRELATION FOR TIME 2

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
17																
1																
2																
3																
4																
5																
6																

TABLE 14
ITEM-SCALE CORRELATION FOR TIME 3

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	.78	.81	.74	.79	.78	.79	.77	-.02	.58	.32	.61	.51	.76	.75	.79	.78
2	.55	.55	.34	.44	.50	.53	.62	.37	.79	.73	.88	.80	.53	.61	.62	.65
3	.32	.20	.33	.30	.15	.16	.35	.02	.21	.16	.23	.20	.86	.87	.90	.90
4	.21	.25	.14	.25	.38	.47	.28	.11	.25	.27	.28	.25	.35	.37	.39	.38
5	.47	.48	.36	.31	.51	.53	.50	.13	.44	.42	.55	.44	.55	.50	.57	.49
6	.43	.36	.27	.35	.38	.37	.41	.21	.38	.42	.39	.33	.39	.45	.46	.45
17	.72	.72	.60	.31	.35	.30	.22	.22	.46	.45	.31	.35	.29	.36	.26	.30
1	.60	.57	.62	.32	.33	.24	.15	.18	.47	.45	.30	.44	.31	.34	.27	.37
3	.87	.87	.73	.29	.25	.18	.22	.17	.08	.12	.12	.13	.19	.18	.17	.14
4	.38	.37	.34	.88	.92	.75	.88	.84	.33	.35	.36	.34	.33	.25	.20	.31
5	.54	.44	.39	.42	.53	.37	.32	.40	.90	.89	.62	.81	.29	.36	.38	.27
6	.43	.42	.39	.36	.37	.29	.27	.29	.35	.39	.27	.24	.83	.77	.63	.77

APPENDIX E

ITEM--FACTOR CORRELATION OR REGRESSION WEIGHTS

SCALE AND QUESTIONNAIRE ITEMS*

Scale No.	Scale Name	<u>Questionnaire Items</u>	
		Time 1	Time 2 and 3
1	Assessment of MBO for own Job	Not measured	1-7
2	Assessment of MBO Impact on Entire Organization	Not measured	8-12
3	Assessment of MBO as a Supervisory Tool	Not measured	13-19
4	Trust in Supervisor	1-9	20-24
5	Trust in Management	20-25	29-32
6	Trust in MBO Consultant	26-29	33-36

*Note that the factors are listed in column 1 and they may not necessarily correspond with the order of the scales.

TABLE 15
ITEM--FACTOR CORRELATION OR REGRESSION WEIGHTS

TIME 1

	1	2	3	4	5	6	7	8	9
1	.71	.39	.77	.54	.66	.61	.50	.66	.60
2	.13	.34	.15	.13	.10	.13	.21	-.03	.18
3	.06	.22	.07	.20	-.03	-.01	.01	.02	.14
20		.20	.02	.08	.25	.20	.07	-.11	.27
21		.20	.02	.08	.25	.20	.07	-.11	.27
22		.20	.02	.08	.25	.20	.07	-.11	.27
23		.20	.02	.08	.25	.20	.07	-.11	.27
24		.20	.02	.08	.25	.20	.07	-.11	.27
25		.20	.02	.08	.25	.20	.07	-.11	.27
26		.20	.02	.08	.25	.20	.07	-.11	.27
27		.20	.02	.08	.25	.20	.07	-.11	.27
28		.20	.02	.08	.25	.20	.07	-.11	.27
29		.20	.02	.08	.25	.20	.07	-.11	.27
1	.13	.20	.02	.08	.25	.20	.07	-.11	.27
2	.73	.81	.71	.66	.39	.70	.08	-.09	.34
3	.01	-.01	.15	.15	.11	.16	.72	.58	.52

TABLE 16
ITEM-FACTOR CORRELATIONS OR REGRESSION WEIGHTS

TIME 2

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	.79	.88	.53	.81	.59	.70	.75	.17	.52	.27	.62	.56	.86	.81	.8	.90
2	.25	.16	.04	.24	.34	.36	.07	.07	.05	-.02	.21	.06	.04	.08	.04	.09
3	.25	.11	.02	.13	.19	.11	.14	.12	.13	.01	.17	.08	.13	.18	.19	-.04
4	.08	.10	.38	.14	.13	-.02	.23	.37	.60	.81	.47	.47	.07	.11	.20	.11
5	.15	.12	.16	.07	.17	.12	.17	.13	.15	.10	-.09	.05	.24	.07	.22	.11
6	.04	.06	-.27	.02	-.01	-.04	-.09	-.03	.25	.11	.15	.04	.13	.06	.13	.00
17	.87	.82	.55	.17	.06	.12	.06	.23	.28	.33	.18	.19	.28	.31	.12	-.05
2	.06	.05	-.19	.72	.73	.62	.85	.74	.22	.22	.26	.28	.13	.00	.11	.19
3	-.02	.06	-.03	.10	.19	.16	.04	.03	.05	.05	.19	.06	.63	.65	.64	.85
4	.12	.19	.32	.00	.17	-.04	.08	-.02	.17	.20	-.01	.02	.24	.08	.15	.19
5	.09	.10	.06	.09	.06	.16	.14	.17	.78	.78	.26	.62	-.07	-.04	.20	.07
6	-.06	-.04	-.41	.18	.10	.16	-.06	-.03	-.07	-.07	.31	.28	.10	.03	.16	.12

TABLE 17
ITEM--FACTOR CORRELATIONS OR REGRESSION WEIGHTS

TIME 3

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	<u>.75</u>	<u>.75</u>	<u>.59</u>	<u>.75</u>	<u>.48</u>	<u>.53</u>	<u>.73</u>	.14	.65	.37	.52	.50	<u>.75</u>	<u>.79</u>	<u>.79</u>	<u>.81</u>
2	.14	.10	.04	.18	.19	.28	.09	.12	.07	.10	-.01	.02	.17	.16	.18	.17
3	.30	.22	-.05	.15	.20	.15	.23	.37	.13	.11	.28	.17	.12	.16	.19	.14
4	.17	.19	.14	-.00	.22	.09	.18	.10	.18	.21	.21	.17	.23	.19	.22	.11
5	.12	.08	.16	-.00	.03	.09	.14	<u>.09</u>	<u>.45</u>	<u>.65</u>	<u>.58</u>	<u>.53</u>	.09	.18	.14	.25
6	.05	.13	.37	.11	.65	.67	.07	-.07	.11	.08	.15	-.12	.22	.10	.18	.18
17	18	19	20	21	22	23	24	29	30	31	32	33	34	35	36	
1	<u>.74</u>	<u>.79</u>	<u>.65</u>	.23	.26	.18	.05	.17	.27	.37	.27	.25	.37	.13	.27	
2	.15	.17	.17	<u>.83</u>	<u>.84</u>	<u>.57</u>	<u>.83</u>	<u>.76</u>	.30	.32	.25	.16	.27	-.24	.19	.30
3	.11	.16	.20	.14	.17	.13	.15	.14	.20	.21	.11	.16	<u>.72</u>	<u>.50</u>	<u>.43</u>	<u>.80</u>
4	.15	-.00	.03	.19	.21	.15	.04	.14	<u>.76</u>	<u>.75</u>	<u>.33</u>	<u>.56</u>	.08	.22	.17	.02
5	.27	.15	.30	.14	.12	.06	-.03	-.07	.15	.18	.05	.19	-.02	.16	.16	.08
6	.21	.02	-.08	.02	.07	.03	.11	.15	.13	.11	.15	.05	.17	-.06	.18	.06

LIST OF REFERENCES

REFERENCES

- Barrett, J. H. Individual Goals and Organizational Objectives: A Study of Integration Mechanisms. Ann Arbor: Crusk Institute for Social Science Research, University of Michigan, 1970.
- Bartol, K. M., Evans, C. L., and Stith, M. T. "Black Versus White Leaders: A Comparative Review of the Literature." Academy of Management Review, 1978, 293-304.
- Bass, B. M. and Mitchell, C. W. "Influences on the Felt Need for Collective Bargaining by Business and Science Professionals." Journal of Applied Psychology, 1976, 61, 770-773.
- Batten, J. D. Developing a Tough-Minded Climate...For Results. New York: American Management Association, 1965.
- Beattie, M. E. Y. "Some Distinctions and Complexities in Interpersonal Trust." Dissertation Abstract International, 1972, 32, 6356-A.
- Beck, A. C. and Hillmar, E. D. Making MBO/R Work. Reading, Mass: Addison-Wesley Publishing Company, 1976.
- Campbell, D. T. and Stanley, J. C. Experimental and Quasi-Experimental Designs for Research. Chicago: Rand McNally, 1963.
- Carroll, S. T. and Tosi, H. L. Management by Objectives: Applications and Research. New York: The Macmillan Company, 1973.
- Chun, Ki-Taek and Campbell, J. B. "Dimensionality of the Rotter Interpersonal Trust Scale." Psychological Reports, 1974, 35, 1059-1070.
- Clegg, C. W., Jackson, P. R. and Wall, T. D. "The Potential of Cross-lagged Correlational Analysis in Field Research." Journal of Occupational Psychology, 1977, 50, 177-196.
- Crano, W. D., Kenny, D. A. and Campbell, D. T. "Does Intelligence Cause Achievement? A Cross-lagged Panel Analysis." Journal of Education Psychology, 1972, 63, 258-275.

- Davis, R. C. The Fundamentals of Top Management. New York: Harper and Brothers, 1951.
- Deutsch, M. "Trust and Suspicion." Conflict Resolution. 1958, 2, 265-279.
- Deutsch, M. "Trust, Trustworthiness, and the F Scale." Journal of Psychology, 1960, 61, 138-140.
- Deutsch, M. "Cooperation and Trust: Some Theoretical Notes." Nebraska Symposium on Motivation. Marshall R. Jones (ed), Lincoln: University of Nebraska Press, 1962.
- Driscoll, J. W. "Trust and Participation in Organizational Decision Making as Predictors of Satisfaction." Academy of Management Journal, 1978, 21, 44-56.
- Drucker, P. F. The Practice of Management. New York: Harper and Brothers Publishers, 1954.
- "EDP Leads the Thirteen Most Popular Management Techniques." Administrative Management, 1973, 34, 26-29, 64-65.
- Etzioni, A. Modern Organizations. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1964.
- Fayol, H. General and Industrial Management. C. Storrs (trans.) New York: Sir Isaac Pitmann and Sons, 1949.
- Feldman, J. "Considerations in the Use of Causal-Correlational Techniques in Applied Psychology." Journal of Applied Psychology, 1975, 60, 663-670.
- Ford, R. L. "Appraising Performance for Individual Development." Handbook of Wage and Salary Administration. ed. Milton L. Rock, New York: McGraw-Hill, 1972, 5-64.
- French, W. The Personal Management Process: Human Resource Administration. 3rd ed. Boston: Houghton Mifflin Company, 1974, 385-387.
- Friedlander, F. "Performance and Interactional Dimension of Organizational Work Groups." Journal of Applied Psychology, 1966, 50, 257, 265.
- Friedlander, F. "A Comparative Study of Consulting Processes and Group Development." The Journal of Applied Behavioral Science, 1968, 4, 377-399.
- Gahagan, J. P. and Tedeschi, J. T. "Strategy and the Credibility of Promises in the Prisoner's Dilemma Game." Journal of Conflict Resolution, 1968, 12, 224-234.

- Gamson, W. A. Power and Discontent. Homewood, IL.: Dorsey Press, 1968.
- Geller, J. D. "Some Personal and Situational Determine of Interpersonal Trust." Unpublished Dissertation, The University of Connecticut, 1966.
- ~ Gibb, T. R. "Fear and Facade: Defensive Management." Science and Human Affairs. Edited by R. E. Farson, Palo Alto, CA.: Science and Behavior Books, 1965.
- ~ Gibb, J. R. "Communication and Productivity." Concepts and Controversy in Organizational Behavior. Edited by W. Nord. Pacific Palisades, CA.: Goodyear Publishing Company, 1972.
- Gibb, J. R. "Defensive Communications." Interpersonal Dynamics: Essays and Readings on Human Integration. Homewood, IL.: Dorsay, 1973.
- Gibb, J. R. Trust: A New View of Personal and Organizational Development. Los Angeles, CA.: The Guild of Tutors Press, 1978.
- Griffin, K. "The Contribution of Studies of Source Credibility to a Theory of Interpersonal Trust in the Communication Process." Psychological Bulletin, 1967, 68, 104-120.
- Hamsher, J. H., Geller, J. D. and Rotter, J. B. "Interpersonal Trust, Internal-External Control, and the Warren Commission Report." Journal of Personality and Social Psychology, 1968, 9, 210-215.
- Hamsher, J. H. "Validity of Personality Inventories as a Function of Disguise of Purpose." Dissertation Abstracts, 1969, 29, 3086-3087-B.
- Hoerl, R. T. "Cooperation and Competition as a Function of Communication and Trust." Dissertation Abstracts International, 1972, 33, 1287-1288-B.
- Hollmann, R. W. "Supportive Organizational Climate and Managerial Assessment of MBO Effectiveness." Academy of Management Journal, 1976, 19, 560-576.
- Hollmann, R. W. "A Study of the Relationships Between Organizational Climate and Managerial Assessment of Management Objectives." Unpublished Ph.D. Dissertation, University of Washington, 1973.
- Hollon, C. J. and Gemmill, G. R. "Interpersonal Trust and Personal Effectiveness in the Work Evironment." Psychological Reports, 1977, 40, 454.

- Hughes, C. L. "Why Goal Oriented Performance Reviews Succeed and Fail." Personnel Journal, 1966, 45, 335-341.
- Huse, E. F. Organization Development and Change. New York: West Publishing Company, 1975.
- Ivancevich, J. T. "Effects of Goal Setting on Performance and Job Satisfaction." Journal of Applied Psychology, 1976, 61, 605-612.
- Ivancevich, J. M. "Changes in Performance in a Management by Objectives Program." Administrative Science Quarterly, 1974, 19, 563-574.
- Jackson, J. M. "The Organization and Its Communication Problems." Journal of Communications, 1959, 9, 158-167, 189.
- Jackson, J. H., and Mathis, R. L. "Management by Objectives: Promises, Pitfalls, and Possibilities." Personnel Administration and Public Personnel Review, 1972, 1, 72-75.
- James, L. R., and Jones, A. D. "Organizational Climate: A Review of Theory and Research." Psychological Bulletin, 1974, 81, 1096-1112.
- Jamieson, B. D. Behavioral Problems With Management by Objectives." Academy of Management Journal, 1973, 16, 496-505.
- Johnson, D. W., and Noonan, M. P. "Effects of Acceptance and Reciprocation of Self-Disclosures on the Development of Trust." Journal of Counseling Psychology, 1972, 19, 411-416.
- Katz, H. A., and Rotter, J. B. "Interpersonal Trust Scores of College Students and Their Parents." Child Development, 1969, 40, 657-661.
- Kaplan, Robert M. "Components of Trust: Note on Use of Rotter's Scale." Psychological Reports, 1973, 33, 13-14.
- Kee, H. W., and Knox, R. E. "Conceptual and Methodological Considerations in the Study of Trust and Suspicion." Journal of Conflict Resolution, 1970, 14, 357-366.
- Kegan, D. L. "Organizational Development: Description, Issues, and Some Research Results." Academy of Management Journal, 1971, 14, 453-464.
- Kegan, D. L., and Rubenstein, A. H. "Measures of Trust and Openness." Comparative Group Studies, 1972, 3, 1797-201.

- Keller, R. T. "A Longitudinal Assessment of a Managerial Grid Seminar Training Program." Group and Organization Studies, 1978, 3, 343-355.
- Kenny, D. A. "Cross-Lagged Panel Correlation: A Test for Spuriousness." Psychological Bulletin, 1975, 82, 887-903.
- Kessel, E. V. S. "Interpersonal Trust and Attitude Toward the Expression of Positive and Negative Affect Within the T-Group." Dissertation Abstracts International, 1971, 32, 1855-1856-A.
- Kirchoff, B. A. "MBO: Understanding What the Experts Are Saying." MSU Business Topics, 1974, 22, 17-22.
- Lathan, G. P., and Yukl, G. A. "Assigned Versus Participative Goal Setting With Educated and Uneducated Wood Workers." Journal of Applied Psychology, 1975, 60, 299-302.
- Lawler, E. E., and Hackman, J. R. "Impact of Employee Participation in the Development of Pay Incentive Plans: A Field Experiment." Journal of Applied Psychology, 1969, 53, 467-471.
- Lawrence, L. C., and Smith, P.C. "Group Decision and Employee Participation." Journal of Applied Psychology, 1975, 39, 229-302.
- Likert, R. New Patterns of Management. New York: McGraw-Hill, 1961.
- Lock, E. A., and Bryan, J. F. "Cognitive Aspects of Psychomotor Performance." Journal of Applied Psychology, 1966, 50, 286-291(a).
- Locke, E. A., and Bryan, J.F. "The Effects of Goal Setting, Rule Learning and Knowledge of Score on Performance." American Journal of Psychology, 1966, 79, 451-457(b).
- Loomis, J. L. "Communication: The Development of Trust, and Cooperative Behavior." Human Relations, 1959, 12, 305-315.
- Luce, R. D. and Raiffon, H. Games and Decisions. New York: John Wiley, 1957.
- MacDonald, A. P., Kessel, V. S., and Fuller, J. B. "Self-Disclosure and Two Kinds of Trust." Psychological Reports, 1972, 30, 143-148.
- McConkey, D. D. MBO for Non Profit Organizations. New York: Amacom, 1976.
- McConkey, D. D. "Twenty Ways to Kill Management by Objectives." Management Review, 1972, 41, 4-13.

- McConkie, M. L. "A Clarification of the Goal Setting and Appraisal Processes in MBO." Academy of Management Review, 1979, 4, 29-40.
- McGregor, D. "An Uneasy Look at Performance Appraisal." Harvard Business Review, 1957, 35, 89-94.
- Mellinger, G. D. "Interpersonal Trust as a Factor in Communication." Journal of Abnormal Social Psychology, 1956, 52, 305-309.
- Mooney, J. D., and Reiley, A. C. Onward Industry. New York: Harper and Brothers, 1931.
- Odiorne, G. Management By Objectives. New York: Pitman, 1965.
- Owens, J. "The Values and Pitfalls of MBO." Michigan Business Review, 1974, 26, 13-21.
- Parloff, M. B. and Hondlon, J. H. "The Influence of Criticalness on Creative Problem Solving Dyads." Psychiatry, 1966, 29, 17-27.
- Patten, T. H. "OD, MBO and RP's System: A New Dimension in Personnel Administration." Personnel Administration. March-April, 1972, 14-23.
- Patten, Jr., Thomas H. Pay: Employee Compensation and Incentive Plans. New York: The Free Press, 1977.
- Pelz, D. C. and Andrews, F. M. "Detecting Causal Priorities in Panel Study Data." American Sociological Review, 1964, 29, 836-848.
- Pilisuk, M. and Skolnick, P. "Inducing Trust: A Test of the Osgood Proposal." Journal of Personality and Social Psychology, 1968, 8, 121-133.
- Porter, L. W., Lawler, E. E. and J. R. Hackman. Behavior in Organizations. New York: McGraw-Hill Book Company, 1975.
- Raia, A. P. Management by Objectives. Glenview, IL.: Scott, Foresman Company, 1974.
- Raia, A. P. "Goal Setting and Self-Control: An Empirical Study." Journal of Management Studies, 1965, 2, 34-53.
- Read, W. H. "Upward Communications in Industrial Hierarchies." Human Relations, 1962, 15, 3-15.
- Roberts, M. D. "Changing Patterns of College Student Trust." Doctoral Dissertation, University of Connecticut, 1972.

- Roberts, K. H. and O'Reilly, C. A. "Measuring Organizational Communications." Journal of Applied Psychology, 1974, 59, 205-215.
- Rogers, Carl R. On Becoming a Person. Boston: Houghton Mifflin, 1961.
- Rotter, J. B. "A New Scale for the Measurement of Interpersonal Trust." Journal of Personality, 1967, 35, 651-665.
- Rotter, J. "Generalized Expectancies for Interpersonal Trust." American Psychologist, 1971, 26, 443-452.
- Rotter, J., Black, B. F. and Heslin, R. "Dogmatism, Trust and Message Acceptance." Journal of Psychology, 1977, 96, 81-88.
- Sawyer, R., Poseward, R., Davis, F. and Fitzgerald, B. "Relationship of Rotter's Interpersonal Trust Scale and Social Class." Psychological Reports, 1973, 32, 989-990.
- Schein, E. H. Organizational Psychology. Englewood Cliffs, N. J.: Prentice-Hall, 1970.
- Schleh, E. C. "Make Your Executive Merit Ratings Realistic." Personnel, 1953, 29, 480-484.
- Schuster, F. E. and Kindall, A. F. "Management by Objectives: Where We Stand -- A Survey of the Fortune 500." Human Resource Management, 1974, 13, 8-11.
- Shutz, W. E. Joy. New York: Grover Press, 1967.
- Shetty, Y. K. and Carlisle, H. "Application of Management by Objectives in a University Setting: An Exploratory Study in Faculty Reactions." Academy of Management Journal, 1974, 17, 155-160.
- Shirley, R. C. "Analysis of Employee and Physician Attitudes Toward Hospital Merger." Academy of Management Journal, 1973, 16, 465-480.
- Sills, D. L. "The Succession of Goals." Complex Organizations: A Sociological Reader. Edited by Amiti Etzioni, New York: Holt, Rinehart and Winston, Inc., 1962.
- Simon, H. A. Administrative Behavior: A Study of Decision-Making Processes in Administrative Organizations. New York: The Free Press, 1967.
- Schleh, E. C. Successful Executive Action. Englewood Cliffs: Prentice-Hall, Inc., 1955.

- Schlencker, B. R., Helm, B., and Tedeschi, J. T.
 "Interpersonal Trust, Promise and Behavioral Trust."
Journal of Personality and Social Psychology, 1973, 25,
 419-427.
- Solomon, L. "The Influence of Some Types of Power
 Relationships and Game Strategies Upon the Development of
 Interpersonal Trust." Journal of Abnormal and Social
 Psychology, 1960, 61, 223-230.
- Steers, R. M. and Porter, L. W. "The Role of Task-Goal
 Attributes in Employee Performance." Psychological
 Bulletin, 1974, 81, 434-452.
- Strong, S. R. and Schmidt, L. D. "Trustworthiness and
 Influence in Counseling." Journal of Counseling
 Psychology, 1970, 17, 197-204.
- Sussman, L. "Upward Communications in the Organizational
 Hierarchy: An Experimental Field Study of Perceived
 Message Distortion." Unpublished Dissertation, Purdue
 University, 1973.
- Swinth, R. L. "The Establishment of the Trust Relationship."
Journal of Conflict Resolution, 1967, 11, 335-344.
- Switkin, L. R. and Gynther, M. D. "Trust, Activism, and
 Interpersonal Perception in Black and White College
 Students." Journal of Social Psychology, 1974, 94,
 153-154.
- TeVault, R. K., Forbes, G. B., and Gromoll, H. F.
 "Trustfulness and Suspiciousness as a Function of Liberal
 and Conservative Church Membership: A Field Experiment."
Journal of Psychology, 1971, 79, 163-164.
- Thompson, J. D. Organizations in Action. New York: McGraw-
 Hill Book Company, 1967.
- Thompson, J. D. and McEwen, W. T. "Organizational Goals and
 Environment." Complex Organizations: A Sociological
 Reader. Edited by Amitai Etzioni, New York: Holt,
 Rinehart, and Winston, Inc., 1962.
- Tiller, E. H. "Cooperative Behavior in a Prisoner's Dilemma
 Game as a Function of Selected Reinforcement Schedules
 and Personality Variables." Dissertation Abstracts
 International, 1971, 31, 5645-B.
- Tosi, H. L., Jr., and Carroll, S. J., Jr. "Some Structural
 Factors Related to Goal Influence in the Management by
 Objectives Process." MSU Business Topics, 1969, 17, 45-50.

- Tosi, H. L., Jr., and Carroll, S. J., Jr. "Managerial Reaction to Management by Objectives." Academy of Management Journal, 1968, 11, 415, 426.
- Wall, J. A. "Effects of Constituent Trust and Representative Bargaining Orientation on Intergroup Bargaining." Journal of Personality and Social Psychology, 1975, 31, 1004-1012.
- Webster's Seventh New Collegiate Dictionary. Springfield, Mass.: G & C Merriman Company, Publishers, 1966.
- Weick, K. E. The Social Psychology of Organizing. Reading, Mass.: Addison-Wesley Publishing Company, 1969.
- Wikstron, W. S. Management By and With Objectives. New York: National Industrial Conference Board, Studies in Personnel Policies, No. 212, 1968.
- Wrightsman, L. S. "Measurement of Philosophies of Human Nature." Psychological Reports, 1964, 14, 743-751.
- Wrightsman, L. S. Assumptions About Human Nature: A Social-Psychological Approach. Monterey, CA.: Brooks Cole, 1974.
- * Zand, D. E. "Trust and Managerial Problem Solving." Administrative Science Quarterly, 1972, 17, 229-239.