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Management by Objectives: A Cost/Benefits Analysis Toward Achieving Organizational Goals

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MANAGEMENT BY OBJECTIVES: A COST/BENEFITS ANALYSIS TOWARD ACHIEVING ORGANIZATIONAL GOALS

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An Abstract Presented to the Faculty of the Graduate School of Lindenwood College in Partial Fulfillment of the Requirements for the Degree of Master of Business Administration

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ABSTRACT

This thesis will focus on the management process commonly known as Management by Objectives in an attempt to determine if this type of management is a viable option for companies to employ.

In its simplest form management by objectives has been around for hundreds of years. The modern day version of this management technique developed in the early 1950's due in large part to the writings of Peter Drucker. MBO's popularity grew slowly at first, but by the late 1960's and early seventies this management technique took hold in the United States and spread to corporations both large and small, public and private.

The purpose of this thesis is to determine if this tremendous growth of MBO was due in fact to the advantages offered through this type of management, or did MBO simply become a fad that many corporations adopted looking for any easy answer to complex problems. Empirical research studies of the day will provide the basis of the evaluation.

Results of this review provides considerable

evidence that the use of MBO has proved to deliver the results that have been expected of it. An over whelming number of empirical studies produced findings that attributed superior results due to the implementation of an management by objectives type system.

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DEDICATION

This work is dedicated to the most important loved ones in my life; My parents, the two people I respect and love most in the world, and to my wife Tamara who has made my life complete.

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INTRODUCTION

Management by Objectives

The changing environment of business in the past several decades has caused a veritable revolution in the management of business today. Early business ventures usually evolved from a one man entrepreneur environment where there were few managers who were actually accountable for bottom line profits. The result was that all jobs had clear cut functions and responsibilities. Today's industries have mushroomed into multi-national organizations with literally hundreds of subsidiaries and thousands of decision making levels of management.

To cope with this situation, industry has continued to change the manner in which it attempts to manage these increasingly complex situations. Complex job descriptions were developed and combined with highly sophisticated organizational charts to spell out every responsibility and point out who reported to whom. Executive evaluations, performance appraisals

and merit ratings become a popular way of determining the effectiveness of managers.

Many of these techniques were highly effective in terms of identifying part of the problem of effective management, but did not get down to the detail of how the organization was operating as a whole. The ultimate evaluation of an organization rests not on job descriptions or organizational charts, but on how effectively the managers of that organization obtain results toward the ultimate mission of the corporation.

The very heart of management is the coordinating of activities of individuals toward the obtainment of certain goals which are defined by the organization. These goals usually involve profit maximization, but are not limited to such. Non profit organizations attempt to improve services rendered for the good of their organizational goal whatever it may be. Thus, one of the principle tasks of the effective manager is to define and interpret the broad organizational goals. These goals then become the essence of the organization's purpose for its existence. The manager must first understand these goals and accept them in order to act accordingly to obtain them (Managing by

Objectives 3).

This attempt to keep pace with the ever changing business environment and to improve corporate performance and profits, has led to the development of many techniques to improve the performance of management and thus the underlying performance of business as a whole. Management theory and practice has evolved and been refined to best facilitate the goal setting process in organizations. Perhaps the best known of these theories in recent years is management by objectives, or commonly referred to as MBO.

Definition of Management by Objectives

The task of defining MBO is not as clear cut as it may appear at first glance. There are as many definitions of MBO as there are practitioners. The concept has been rearranged and called by many different titles such as; management by results, management by commitment, management by objectives and results, management by goals and results, individual goal setting, goals and controls, work planning and review, objective strategies and tactics and charter of

accountability concepts. Regardless of the name used, the basic premise of MBO is to provide a system to facilitate managerial planning and control, provide for an objective performance appraisal, set guidelines to help train and develop managers, provide the basis for incentive compensation and to increase the level of management involvement with the operation of the organization as a whole,[as opposed to just their individual unit of authority] (Managing by Objectives 11).

MBO is a philosophy of management which attempts to provide the manager with the framework to first understand the goals of the organization and to provide a means of obtaining these goals. The MBO philosophy is based on the concept of results-oriented management which emphasizes accomplishments and results. The focus is to improve the effectiveness of the individual which in turn should effect the results of the overall organization if goals are properly defined. MBO encourages increased participation of management at all levels of the organization to accomplish the objective of the organization. In essence, MBO is a hands on active management style (Making MBO/R Work 11).

MBO also attempts to make the manager manage by being proactive as opposed to a reactive style of management. The main emphasis is on trying to predict and influence the future as opposed to simply responding and reacting to situations which have already occurred. This reactive style of management is often referred to as management by crisis where the bulk of management's attention is focused on reacting to situations which are contrary to the goals of the organization. Thus, by having a set road map and clearly defined objectives, the manager can influence the nature of events to keep in line with their ultimate desired outcome.

In order to get a broad perspective of what MBO actually is, it may be helpful to quote some of the more popular definitions. There is no one set definition as each individual views the process of applying the underlying philosophy differently. Some of the more popular definitions include:

> A comprehensive managerial system that integrates many key managerial activities in a systematic manner, and is consciously directed toward the effective and efficient achievement of organizational and individual objectives. (Management 87)

> Management by objectives is a process consisting of a series of interdependent and interrelated steps : (1) the formulation of clear, concise statements of objectives; (2) the development of realistic action plans for their attainment; (3) the systematic monitoring and measuring of performance and achievement; and (4) the taking of the corrective actions necessary to achieve the planned results. The key elements in the process are "goal setting," "action planning," "self control," and "periodic progress reviews." (Managing by Objectives 11)

Some of the more detailed definitions give a broader perspective of what MBO is actually about.

> First decide what the broad objectives of the company should be. These are the strategic goals. They involve such basic questions of policy as, what profit return should be aimed for? How big do we want to become? What products should we sell? In what markets?
>
> Next, develop operating plans in each functional area as the means of reaching the broad objectives. This involves determining what plant to build, and where, and how; where the money is to come from, and what kind; how the markets will be reached; and what R&D effort will be required-all this, of course, being spelled out in detail. Full consideration, too, should be given to planning the development of people who will have the needed managerial and technical skills.
>
> Then, all members of management down through first-line supervision should be acquainted with what's expected of them in carrying out the plans.

> Finally, the use of coach and counsel method in helping subordinates play their part as the plans go into action. (How to Manage by Results 16)

As can be seen from the above example and the example to follow, MBO is a process that involves the entire organization. It is not limited to small segments or departments, but is a method of management that keeps the entire organization focused on its ultimate mission. Since MBO implementation is designed to lead toward the ultimate mission of the organization, every aspect of the business must have a specific plan as the above definition states. It is of the utmost importance that all the plans be prepared to achieve the same objective. This is where MBO ties the entire organization together to form a common unified effort.

> MBO is a systems approach to managing an organization, any organization. It is not a technique, or just another program, or a narrow area of the process of managing. Above all, it goes far beyond mere budgeting even though it does encompass budgets in one form or another.
>
> First, those accountable for directing the organization determine where they want to take the organization or what they want it to achieve during a particular period (establishing the overall objectives and priorities).

> Second, all key managerial, professional, and administrative personnel are required, permitted, and encouraged to contribute their maximum efforts to achieving the overall objectives.
>
> Third, the planned achievements (results) of all key personnel are blended and balanced to promote and realize the greater total results for the organization as a whole.
>
> Fourth, a control mechanism is established to monitor progress compared to objectives and feed the results back to those accountable at all levels. (MBO for Nonprofit Organizations 10)

As can be seen from the above quotations, there is no one definitive definition of MBO. Each organization must adapt its particular needs and form the type of MBO system that will best suit its needs. The one clear point that reoccurs in most definitions of MBO is that it is a technique that strives to control the operations of the entire organization in an attempt to keep all departments working toward the same goal.

One of the mistakes that many people make is to relate or confuse the difference between MBO and such other functions as cost accounting, standard costing or other such tools of the finance department. These control techniques can only measure concrete tangible items which can be reduced into numbers. These

techniques have no procedures to determine the course of future action. They do however provide a means of measuring performance, but fall far short of what the process of MBO can accomplish. These types of tools can be used within the MBO process but are not an end in itself.

History of Management by Objectives

No single individual can be credited with the creation of MBO. It has been used in one form or another for over one hundred years. One of the early individuals who placed emphasis on management by objectives and thus sped its progress along was Peter F. Drucker. Drucker is generally credited with providing the first written statement about the MBO philosophy and process. His first writings on MBO occurred in 1954 where he described the role of management and thus laid the ground work for the formal application of the MBO principles. Drucker's early concept of how management was best able to achieve the highest possible performance led others to adopt and expand these concepts which ultimately became the basis of MBO. According to Drucker,

> ...the job of management is to balance a variety of needs and goals in every area (market standing, innovation, productivity, physical resources, profitability, manager performance and development, worker performance and attitude, and public responsibility) where performance and results directly and vitally affect the survival and prosperity of the business. (Managing by Objectives 12)

Drucker stated that the first requirement is for each manager to himself, establish objectives for their respective unit of responsibility. The objectives, according to Drucker, must be consistent in terms of their contribution to the larger unit of which the part is a sub-unit. Drucker also stated that in order to insure the objectives that were set by each individual manager were consistent with the purpose of the organization, that those same managers be involved with the development of the objectives of the higher unit, the organization (Managing by Objectives 12).

The second key element to Drucker's early definitions of MBO was to be able to measure actual results against the previously planned objectives. Drucker emphasized that the measurements need not be rigidly quantitative, nor exact standards, but should be clear and rational. Drucker theorized that managers

who had clearly defined objectives which could be measured would lead to greater motivation on the part of the individual manager (Managing by Objectives 12).

In 1961 Edward C. Schleh slightly modified the popular thinking of how to implement the process of MBO. Schleh expanded on Drucker's thinking on the point of objectives. Schleh concluded that better results and more commitment could be obtained if the work of the manager toward the overall objectives of the organization be tied with the personal interests and desires of the particular manager. Schleh concluded that managers often get lost in the daily activities of their own specific area of responsibility and thus loose sight of the objective of the organization (12).

Douglas McGregor agreed with the insight that was provided by Schleh. McGregor stated that genuine commitment is based on the principle that people will exercise self-direction and self-control in the attainment of organizational goals to the degree that they are committed to them. This tied back well with Drucker's theory that managers should be involved in the objective setting process of the next higher level

of management (13).

Development of Management by Objectives

In taking a broad look at the historical development of the MBO process three distinct phases of development become apparent. Phase one could be loosely defined as the "early evaluation period," characterized by the emphasis on performance appraisals. Phase two could be classified as the "mid life stage," which occurred during the 1960's which emphasized planning and control. The final and most recent stage, stage 3, is characterized by the integrative management systems approach (14).

During phase 1 development of the MBO system during the early 1950's, the focus was very narrow and rigid. This main focus was on evaluating the performance of managers. This was primarily done by developing objective criteria and standards of performance for individual managers in their respective area of responsibility. Managers were then forced to place value judgements upon their subordinates. These judgements were often based on personality traits and caused much tension between the subordinates and their

managers. Later development during phase 1 improved this situation by involving the subordinate in the process of setting objective performance goals and also involving the subordinates in evaluating their own performance toward the previously set goals (14).

There are several characteristics that define the distinguishing traits of phase 1: The first and probably the most important is that MBO was only passively supported by top management. MBO at this time was not widely accepted as a productive tool in the management of business. As a result of top management's lack of support and involvement, the leadership and responsibility of the program essentially came from the personnel department. This resulted in low involvement of the line managers since they were primarily limited to filling in the forms that were provided by the personnel department. They were required to follow strict guidelines in performing performance appraisals. In addition, during this early phase, performance appraisals were usually conducted only once a year and usually involved only the manager and subordinate. If the MBO process did not develop past these characteristics it usually failed, or at

best, was only a limited tool for business management at that particular company (14).

As the concept of MBO became more widely accepted and spread to more companies, the application of the concept also changed and evolved. The second conceptual phase began sometime around the late 1960's which is often referred to as the planning and control stage of the MBO evolutionary cycle. During this second phase, a much broader view of the role that the MBO system played was realized. The emphasis was on incorporating MBO into the organization's total planning and control process. Objectives now became tied to total organizational goals which were then used to establish budgets. Thus, the process of establishing objectives was used to tie the entire organization together in order to achieve a common goal (15).

Appraisals were still a vital aspect of the overall process, but control of these appraisals had shifted to the front line manager in cooperation with their subordinates. The increased use of the performance appraisals caused a secondary effect of more and better training of subordinates. This need

for additional training became apparent in discussions on how the subordinate would achieve the agreed upon objectives. When an agreement was reached as to what the objectives for the given subordinate would be, plans were then laid on how that objective was to be obtained. This often involved personal training and coaching from the manager of the subordinate or formal training or retraining to achieve the desired results. This type of one-on-one discussion also fostered a better understanding between the manager and the subordinate. These discussions often eliminated the adversarial relationship between the different levels of management and between management and labor (15).

The major characteristics of phase two included greater involvement with support and participation of top management. Top management was beginning to realize that MBO was not simply a passing fad, but instead a sound tool to improve the effectiveness of their organization. A second characteristic of phase two was the transfer of responsibility for implementation and design of the MBO program from the personnel department to the line supervisors. Personnel departments continued to play a major role,

but this role was more of a support and reference role for the line managers. A third major change which occurred during phase two was the increased emphasis on training and development of all employees from senior management to hourly employees. Coaching and cooperation were needed to achieve the high objectives that were being set. A fourth characteristic of phase two was that the MBO program became tied to the organization's planning and budgeting. This was a result of the overall corporate strategy being tied to the development of MBO and its objectives. The MBO process was beginning to take shape as a plan to guide the operations of the entire corporation toward a single end result as opposed to individual operations or departments working toward their own end (17).

Around the mid 1970's MBO evolved into a third phase sometimes known as the integrative management systems approach. The development of the MBO philosophy by this time had become an accepted method of business management. During this period, it was becoming "trendy" in American business to have some sort of MBO program in place. Phase three involved the MBO process in all decision making and goal setting

processes within the organization. The MBO process was used to tie together organizational goals, strategic planning, problem solving and decision making. In addition, executive compensation and management training and development were all tied to the MBO process. The main direction of MBO now came directly from top management, but managers from every level of the organization were involved. This fostered an atmosphere of teamwork and cooperation throughout the entire organization. Goal setting became more flexible and covered longer and longer time periods. Performance appraisals became more elaborate and were updated and reviewed more often. Emphasis was placed on individual growth and development with the objective being to accomplish the mission of the organization (18).

Problems with MBO

Although MBO as a system has proven itself useful over the course of time, there are problems associated with its process and implementation. Many corporations have unrealistic expectations of what the implementation of a MBO system can do for their

organization. The real test to determine the usefulness of MBO needs to be measured in terms of years, not simply the early months of implementation.

Because of the widespread popularity that MBO has enjoyed during the past decade, many organizations decided to adopt MBO without actually understanding what the process is about. They read stories about some fabulous success that a company experienced due to the use of MBO and felt that the MBO system was a miracle procedure that would yield them the same success. The organization failed to realize the impact that proper implementation of MBO would have on the organization as a whole. Upper management mistakenly believed that MBO would be implemented and that their job would continue as normal and they would not be affected, but that good things would happen to the rest of the organization.

This can usually be avoided by management taking the time to learn what MBO is and also what effects the implementation will have on the organization. Only after this is understood, can a rational decision be made as to whether MBO is right for their organization.

The implementation of MBO can be an expensive

proposition at first. In addition, control of certain aspects of the organization tend to be rearranged. These are some of the things that management fails to understand if they go into the system without a full understanding of what MBO actually is.

Another aspect of the implementation of MBO before it is fully understood is the lack of proper perspective of how to establish objectives. In a new MBO system, objectives too often become an end in themselves. This defeats the purpose of unifying the organization into a single unit by the use of corporate objectives. Objectives must be carefully evaluated to insure that they will achieve the desired results. Inexperienced managers not trained in proper MBO often compose objectives that are useless in achieving the desired outcome. Objectives such as "to improve production in the assembly department" serve no use in the process of determining how to improve the production. If an objective is stated as the above, it is usually put aside until the manager is required to develop another objective and thus serves no real or useful purpose.

Objectives can not be written in a single day.

Organizations which have productive MBO systems constantly stress the continual updating of their objectives. Managers who are effective users of MBO want to be continually evaluating their objectives to see where they can be improved. These managers are aware that the better they can define their objectives, the better they are able to manage and be proactive to their environment.

There are four major obstacles to avoid when developing a good set of objectives: 1) The objective cannot be tested for realism, 2) It is all but impossible to intelligently allocate resources to the objective, 3) The manager has no guide or timetable for action during the target period, 4) Monitoring or controlling of the progress becomes extremely difficult. In simple words, the objectives need to be used as a tool and not just as busy paperwork (MBO for Nonprofit Organizations 86).

One of the most important aspects that is often ignored or receives too little attention is the process of feedback. After effective and useful objectives are written, then feedback needs to be constantly monitored to observe how well the objectives are obtaining the

desired results. The more achievement oriented managers are, the more they want feedback which can be useful to them. Good managers want to know continually how well they are achieving their objectives and what can be done differently to get closer to achieving their objectives (Varney 26-27).

One common downfall of a well planned MBO system is the failure to devote enough time in studying rewards for managers who achieve their objectives. If an equitable system of reward is not set up for managers who continually improve performance and achieve ever higher and higher goals, then that level of performance is likely to deteriorate. A fine line needs to be set to determine the performance of a manager who sets easily obtainable goals and also has a high level of performance based on raw numbers, and a manager who sets a high level of expectation that may not show up as such in raw numbers, but ultimately moves the organization closer to its goal. A reward system needs to be fine tuned to account for these different levels of aspiration. The reward system does not want to reward a manager for simply playing a numbers game (Varney 27).

Along the same lines, bias often enters into the picture when determining rewards. Some managers tend to view the performance of their subordinates in a stricter vein as opposed to other managers. This personal bias can then prove to be a stumbling block to an equitable reward system. Personal friendships and personality traits can affect a subordinate's performance review (Daley 17).

To avoid the personal bias often involved with performance appraisals, some organizations often fall into the fallacy that all judgements of performance should be based solely on numbers. This often leads to the ultimate deterioration of an otherwise effective MBO system. When managers start working toward obtaining certain numbers to meet the objectives of performance appraisals, they often sacrifice or compromise items which are ultimately counterproductive to the organization as a whole. At this point, the manager is working toward rewards for themselves and not toward the organizational goals. The end result is that short term goals are often obtained at the expense of the organization's long term objectives.

In many instances, an organization spends

considerable time and money on the initial implementation of an MBO system. All managers are taught the MBO philosophy and techniques. After this initial training, those managers are sent on their way and this is the end of the formal training. New managers to the organization are then taught by the older members of the management team, who may or may not be good teachers. These older members can also interpret how MBO is implemented in a different light than the organization as a whole. The end result can be different interpretations of the system within the same organization. In addition, the structuring of the MBO system may have changed dramatically since its initial inception (Daley 17-18).

A good MBO system is constantly changing. The system must be flexible to adapt to the ever changing business environment. This necessitates ongoing training in the MBO process. All new managers should be involved in formal training in addition to seasoned managers being trained in refresher courses to keep focused on the new trends of the MBO system.

Summary and Statement of Purpose

MBO is a tough and demanding type of management system. It requires highly competent managers who are able to carry out the system and make it work effectively. If properly implemented, the rewards and effective returns from the investment of time and resources are well worth the effort.

A properly implemented MBO system can greatly enhance the use of an organization's resources both financial and human. A well defined and planned MBO system can enhance the commitment of management and labor alike. Effective controls are also put in place by a good MBO system. The entire organization can be focusing on the same goal and working toward common objectives which are laid out by top management.

On the opposite side of the ledger, a MBO system that is not properly planned or supported by top management can be a costly proposition to an organization. The MBO system can remain in place for years and years and ultimately be costing the organization a substantial amount in time and wasted effort. There are many down sides to MBO in trying to get the system implemented and in maintaining the

system to operate smoothly and effectively.

Too often, a MBO system that is not properly supported by top management can become a tremendous drain on the human resources of a company. The organization can become caught up in an endless and useless amount of paperwork that serves no useful purpose in getting the results needed. The paperwork simply becomes part of the bureaucracy needed to support a useless MBO system.

If short term goals are placed in higher regard than long term company objectives by managers who are attempting to reach their own objectives, then the MBO system is a failure. It fact, it could be very costly to the organization in the long run. A properly designed MBO system needs to monitor that an individual's objectives are consistent with the organization's long term objectives.

In recent history no issue has divided managers more that the question of the effectiveness of MBO. Thus, the question arises, is MBO a viable management system that can help organizations reach new heights in performance? Or, is it just too complicated to develop and operate? The following sections of this paper will

review the literature of the day in determining if MBO has been effective in the past.

The purpose of this study is to determine if in fact the use of MBO within organizations, both profit and non-profit, is beneficial to business organizations. The term beneficial is broad and can have many meanings in this context. Specifically, this study will focus on how MBO affects organizational performance (output), employee attitudes, quality issues, morale and any other pertinent concerns that arise within an organization. All these variables will then be evaluated to determine if MBO is a management technique that should be considered by organizations in today's business environment as a viable and useful tool, or should the use of MBO be avoided.

Chapter II

LITERATURE REVIEW

In examining the writings of the day concerning management by objective, there seems to be an endless supply of material, both pro and con. This material appears in both popular journals as well as empirical studies written for scholastic journals. A study of the writings in the popular journals will lay a foundation of knowledge to be expanded upon by review of empirical-based research studies.

It is important to consider the popular writings of the day in order to establish the "mood" of the "average" business person on the street. The review of this material will be used in conjunction with empirical studies in order to get the total picture of MBO and its effectiveness in the actual business world, as opposed to just the theories presented in text books and magazines.

This total approach to ascertaining the effectiveness of MBO is necessary due to its complex nature. Two individuals reviewing the same MBO system may have differing opinions on its effectiveness

depending on their point of reference. Due to past experience and individual preferences, one may view the MBO system as highly useful and cost effective while the next person may view the same system as useless, time consuming and ineffective.

Stephen Harper writing in the May/June 1988 issue of Management World defines the different factions associated with MBO. He states that of all the ideas and approaches that have been formed to help managers in the past few decades, none have divided managers more than MBO. Harper feels that managers either adopt MBO to the point of a fanatic or view it as something to be avoided at all costs (Harper 24).

There are numerous reasons stated in the article for the differences that exist in attitudes toward MBO. The segment opposed to MBO say that the essence of business cannot be put into a single statement of objectives. To these individuals, MBO is simply an exercise in futility which requires too much time and paperwork. Opponents claim that managers often get so wrapped up in the way procedures are handled in a MBO system that they lose sight of the ultimate destination or mission of the firm. This often happens when the

MBO plan is followed to the letter, and the system simply becomes an exercise in paperwork (25-26).

As opposed to the above, managers who use and support MBO don't consider it just a technique or a burden. They consider MBO an effective way of managing, a way to improve planning, decision making and overall performance. According to Harper, the primary value of MBO is that it provides a focal point for all behavior. It encourages managers to think about the long term consequences prior to making everyday decisions. MBO consistently makes the manager answer the question, "Is what I'm doing getting me closer to my objective?" MBO encourages employees to strive for higher levels of performance and to take a closer look at what they are doing, according to proponents. An added advantage or side benefit to the proper use of MBO is that it also increases accountability for performance (26).

In an article entitled "MBO Magic", the author describes very basic and simplistic points of why she feels that MBO, as a system, is effective in a business environment. The article likens business to sports with a bottom line of goals. What fun would a golf

game be if the participant did not count strokes, or tennis if no score was kept? These are important points in sports because they form the basis of goals (Crane 61).

Crane believes that in sports, goals are clearly defined and objective. Players can compare their current results with past performance. Golfers can compare their score from the previous week and determine if any progress has been achieved toward their desired score, or their goal. This gives sports participants immediate feedback on their pursuit toward obtaining their final objective, or goal. This constant feedback and scorecard is what motivates sports enthusiasts to excel to higher and higher levels of performance toward obtaining their goals. Many feel that this is what motivates individuals to put so much effort into sports which have no financial reward, but at the same time put very little effort into their jobs which would ultimately lead to financial rewards (62).

Crane writes that these same characteristics which motivate sports enthusiasts are incorporated into a good MBO system. The system gives employees a scorecard of how they are doing on their job in

relation to a predetermined goal. Feedback, which is considered by many management experts to be the single most important motivator, is given to the employees via the MBO system, much in the same manner as a sports participant receives feedback by use of his score. The cycle of setting goals and receiving feedback is started and provides for employee motivation via the MBO system (64).

A similar article which touts the virtues of goals is "Going for the Goals" by Steve Kaufman. Kaufman reviews the MBO system used by Cypress Semiconductors Corporation of San Jose, California. Cypress calls its version of MBO a turbo management by objective. The main emphasis of the company's MBO system are goals and accountability for their obtainment. Cypress Corporation believes that the best MBO system makes the establishment and monitoring of goals the central function of the entire organization (Kaufman 42).

Cypress Corporation takes this MBO goal setting philosophy to the maximum. For the 675 employees there is an average of 4,500 weekly goals which are monitored and tracked. Every week the company's head officers meet to review how each function is performing in

relation to their goals. This monitoring and feedback are critical elements in the overall MBO process. Chief executive officer T.J. Rodgers can call up any of the 4,500 goals on his computer at any time to check on its current status. This allows him at anytime to take a project, put it under a microscope and find out exactly what is going on and how the project is progressing (39-40).

The performance record of Cypress Corporation speaks for itself as profits are at record highs at the same time the semiconductor industry is mired in a severe downturn. In addition, ninety percent of the company's semiconductors work right the first time which is twice the industry average. Cypress credits the use of its MBO as the driving force that keeps the company on track to perform well, both financially as well as in quality issues (42).

There is another subset of articles which consistently appear in popular journals. These articles advocate adding new dimensions or improving certain aspects to customize MBO systems to a particular company. These articles suggest that the basic premise of MBO is sound, but needs to be custom

tailored to a particular type of business or industry. One such article written by Albert Schrader and G. Taylor Seward is titled "MBO Makes Dollar Sense." What this article is advocating is to add a new dimension onto an existing MBO system. The article illustrates the Boehringer Mannheim Corporation as an example of how this added feature of MBO works or enhances MBO when properly applied.

The basic premise of the author is that the main purpose of a business is to make a profit. So thus it follows that every individual in the organization should have a responsibility to contribute to the economic well-being of the company. This is an extreme idea, given the drastically different responsibilities of different people within an organization. At Boehringer Mannheim Corporation, every key professional is able to quote a dollar amount that their efforts contribute to the corporation's bottom line (Schrader, Seward 32).

The use of this step which is implemented in conjunction with the firm's entire MBO process helps all the other steps of MBO become better defined. In order for employees to be able to figure a bottom line

dollar amount that their efforts contribute, the employees first need to define the responsibilities of his job and what his goals are (this process is also derived through the MBO process) and how they are to be obtained. For example:

> A warehouse manager wants to reduce inventory levels (now valued at $1.5 million) by 5% without increasing the amount of products that are out of stock. The value of this action is $75,000 (35).

This now forces the warehouse manager to have a set goal, (reduce inventories by 5%) which in turn forces him to lay out a plan to achieve these goals. The warehouse foreman now has a measuring stick to determine his progress. This is then the first step in the formation of the entire MBO process. This step then enhances all the other steps that make a MBO system effective. The MBO process thus completes a full circle from defining needs, setting goals, laying out methods to achieve the goals, and feedback on progress toward the defined goals. The use of an actual dollar value adds a concrete and physical aspect to goal setting which can easily be understood (32-36).

Schrader and Seward claim that by adding the

dollar concept to an existing MBO system employees will achieve a "stretch concept." This states that employees will stretch beyond their usual limits to achieve positive results which are ordinarily out of their area of responsibility. For example:

> A production manager has the traditional targets of filling production quotas, meeting delivery schedules, achieving quality levels, controlling costs and so forth. The manager, however, (at Boehringer Mannheim) assumed responsibility for and set specific objectives to: Help engineering cut the time required to get a new product on line; Implement a new, computerized customer order tracking system; Devise a material handling system that reduces costs below mandated levels (34-35).

This all occurred as an attempt of the employee to better help the firm's bottom line results and thus add value to her existence within the firm.

The authors claim that in addition to directly adding to the bottom line, a second side effect occurs as a result of the dollar value concept being added to MBO. Over a period of time as the "modified" MBO process matures, significant changes in the organizational culture appears. These include greater emphasis on results, improved teamwork, greater sense of employee contribution and a growth in

entrepreneurism (37).

Richard Freedland, in a recent article, advocates combining the principles of two familiar management techniques, MBO and just in time (JIT) manufacturing to form what is commonly call total quality control (TQC).

The principle advantage of the combination of these two management techniques is that employees understand what is required of them and a means for performance evaluation has been created. This technique forces the MBO system to provide numeric fact based feedback and goal evaluation (Freedland 38).

This is especially effective within a firm when quality of product is of utmost importance. The combined process shows each employee what his expected contribution is and how his piece of the job interrelates with other parts to form the whole. Each piece of the job puzzle must fit together in order for the mission of the firm to be a success. The use of total quality control is of a greater benefit than is simply the use of MBO and just in time manufacturing used separately. The value of the whole is greater than the sum of the parts. When combined, just in time manufacturing brings out the best qualities of the MBO

process and vice versa (39).

Similar to the above, a study was performed by Charles H. Huettner evaluating the effectiveness of another MBO system that was modified in combination with a separate type of management system. The study proposed an integrated system approach to managing organizations which combined MBO and job task analysis, which the author refers to as job task systems management (Huettner 783).

Huettner states:

> Job task systems management is not a strategy for day to day management of people with an organization. It is, rather, an underlying structure which day to day management can rely on for support and for a base line in charge. Management by objective theory provides the basic management framework from which job task systems management emanates. Job task systems management provides the methodology to construct an integrated system with which management by objective can more effectively function (783).

The job task systems management system establishes goals and objectives to define the type, quality and quantity of work to be accomplished by the organization. Since the system has in its basis the job task analysis element, the type of work at a point in time is constantly being redefined. Thus, setting

quantitative objectives becomes relatively simple. The organization knows the quantity of job task work required from staffing standards and program guidelines. Thus, it is possible to set the objectives by dividing the work among staff members who are qualified to do the jobs and have previously been defined by the job task analysis. This relieves supervisors of many of the problems associated with monitoring the quantity of work and allows them to spend their time on the quality of the work being performed by their employees. When this process is incorporated into the existing MBO process, a significant improvement in the productivity and quality of the organization is realized. Again, the combination of these two management techniques which complement each other is significantly more effective than simply the application of each system separately (788).

A final such article that advocates modifying current MBO systems appeared in the Personnel Journal written by Sanford Bordman and Gerald Melnick. The authors suggest that the typical MBO system does a very fine job of providing human resource professionals with

the information needed to distribute base merit raises and promotions, but, it falls far short of maximizing employee productivity or motivating subordinates (Bordman, Melnick 50).

As noted earlier, feedback is the primary motivator of employees. Per the article, the MBO system is too time consuming to allow managers to give subordinates expedient feedback. It often takes managers as much time to prepare for a performance review as it does for the actual review. This fact makes timely reviews on a frequent schedule inconvenient at best (50).

Bordman and Melnick suggest that management incorporate time based index (TBI) with their existing MBO system to provide subordinates feedback needed to maximize motivation (50).

Time based index, when properly set up within a MBO, can provide immediate and concrete number based feedback to employees for each job performed. The formula used in the article is time based index = established time for task completion divided by actual time to task completion times 100. To use the time based index, the task requirements are defined and a

time frame is agreed upon between the supervisor and employee using standard MBO procedures of supervisor/employee interaction to set predetermined goals. Also at this point, the MBO process helps to identify any training or coaching needed to complete the task in a timely and productive fashion. It is important to realize that time based index used ineffectively can provide negative motivation if unrealistic standards are simply given to the employee. Proper use of the MBO system for goal setting techniques is essential to make this function of time based index operate effectively. The process of time based index and MBO needs to be carefully combined and integrated into one system, not two separate systems, if time based index is to be an effective addition to the management by objective system (51).

For example:

> Estimated, or agreed upon time necessary to complete a job is 35 hours. The subordinate completes the task in 35 hours, therefore the time based index is 35 divided by 35 = 1 times 100 = 100. If the task takes only 30 hours, the time based index would be 35 divided by 30 = 1.16 times 100 = 116. The higher the time based index the more effective the subordinate (50).

Another variable can be added to this formula, that being the need to perform the job within quality parameters. Simply completing a job quickly can often cause quality to suffer and the end result is worse than a job performed slowly, but accurately. The authors suggest, the simpler the quality index, the more reliable it is. Keeping this in mind, they suggest using only three quality distinctions: Zero if the quality targets are not met; one when quality targets are met and; two in cases when quality targets are exceeded. This results in a productivity rating index (PRI) which combines the time and quality indices into a single measure: productivity rating index = time based index times quality factor (50).

The end result is that the productivity rating index stresses quality. A quality score of zero, (quality targets are not met) reduces the productivity rating index to zero (productivity rating index = 100 times 0 = 0), while a superior quality rating can convert a low time based index score to a superior score (productivity rating index = 75 times 2 = 150) (51).

This index allows for immediate feedback to

employees each time a job is completed. In addition, most MBO processes divide target goals for subordinates into quarterly and yearly goals. The time based index or Productivity Rating Index can be expanded to chart scores of employees to be used within the yearly MBO reviews. This is accomplished by use of a P.O.T. score, (Progress Over Time). The P.O.T. score is calculated as: average second half productivity rating index less average first half productivity rating index divided by average productivity rating index for the evaluation period (51)

As an example, second half average productivity rating index = 125 and first half average productivity rating index = 75, which is an average of 100. Thus, the P.O.T. score of (125 - 75)/100 = 50/100 = .50. No improvement during the time period would yield (75 - 75)/75 = 0. A decline in performance would yield (75 - 125)/100 = (.50) (51).

When this process is properly implemented within the existing MBO system it provides for maximum employee feedback, both immediately and over the long term. It relieves managers of the time consuming process of subjective evaluations of employees. The

end result is increased productivity while enhancing and sustaining employee motivation throughout the evaluation period. When properly combined with MBO procedures, the modified MBO time based index/productivity rating index system provides the clear goals needed to further long term employee productivity and quality. The use of time based index/productivity rating index without MBO usually proves to be unproductive. The goal setting process and employee/employer interaction which MBO enhances provides the emphasis needed to make time based index/productivity rating index effective within MBO (51).

Thus far the literature that has been reviewed covered authors who advocate MBO, or authors who advocate MBO with modifications. But, as suggested earlier, there is also a major segment of the population who feel that MBO is a noneffective type of management. An evaluation of these authors will provide the needed base of knowledge to accurately evaluate the empirical studies that will be reviewed next.

One article that falls under the category of MBO

as a failure is entitled "Expectations Issues in MBO Programs" by Edward Marlow and Richard Schilhavy. The authors claim that the string of success stories that have been expected by theorists and management personnel alike have never developed. This is due primarily to fundamental differences in managing management and employee expectations about what MBO can do for them, or to them, in the case of the employee. The major reasons outlined for the failure of management by objective is as follows:

> 1) Coordination among the participants in developing the objectives, 2) Specificity of objectives, 3) Level of aspiration, 4) Appropriate planning horizons, and, 5) Perception about the objectives. The potential for manipulation, misapplication and particularly misperception exists at every phase of the management by objective program (Marlow, Schilhavy 29).

The authors list the general composition of MBO systems and acknowledge that the conceptional theories and points are very sound and theoretically correct. Unfortunately, according to Marlow, all human behavior is full of disasters where fundamental principles or obvious data is overlooked, ignored or rejected (29-30).

The authors concede that the strengths of MBO are universal, but, the weaknesses are often specific to particular organizations and supervisors. The major weakness per Marlow and Schilhavy is that implementation of MBO is much more difficult than generally acknowledged. Other weaknesses are; 1) Excess paperwork, 2) Supervisors are often reluctant to provide review and feedback, 3) Emphasis is on setting and meeting quantitative goals, 4) Little congruence between the goals of the supervisor and those of the employee, and, 5) Organizational rewards don't follow performance (30). These weaknesses point out some important concerns that should be addressed by any company considering an MBO system.

Marlow and Schilhavy suggest that perhaps Peter Drucker who originally proposed the concept of MBO in his book The Practice of Management (1954), had a great deal to do with the rise of MBO's popularity. Drucker's reputation combined with the persuasiveness of his writing may have caused the surge of MBO's popularity. His writings propelled MBO into the forefront of management ideologies. The popularity of MBO is evident from a 1974 survey showing 40% of

Fortune 500 firms had an MBO program. By 1980, 75% of large industrial firms used MBO (29).

Marlow and Schilhavy quote Levinson in their article to make a point. Levinson was one of the early critics of MBO. He insisted that MBO was just another name for industrial engineering. The only difference was that it was used by a higher level of management. Levinson's main objection was that MBO was self defeating because it focused on a reward-punishment psychology. It essentially increased pressure on an individual by limiting the choice of objectives. Levinson listed these major problems with MBO; 1) Job descriptions are essentially static, 2) Little weight is given to the areas of discretion open to a manager, 3) Most jobs are interrelated limiting any individual's control and freedom of action, 4) The time span is too brief, giving little incentive for long-range planning, 5) It ignores the personal objectives of the individual (31).

The article concludes by saying that MBO is a sensible tool for attempting to remove the arbitrariness, hindsight bias, and inconsistency in management. But, due to inconsistencies noted, MBO

will never rise to its highly acclaimed expectations. Difficulties that arise in MBO programs usually do not work themselves out, but get worse over time. Thus, a serious look should be given prior to the investment in time, money and effort required to implement a company wide MBO program (35).

In a similar article Alan Fowler states that MBO has failed as a tool for management. Fowler suggests several reasons that MBO has not developed into the highly effective management tool that it was originally designed to be (Fowler 49).

First, MBO systems were derived to be a nice neat package to fit all corporations. It may have been a perfect fit for some companies, but very few. MBO as a rule requires a highly structured ordered and logical approach which was more compatible with traditional bureaucracies than with the fast paced, ever changing business environment. The rigid format of MBO was better suited to high level administration jobs, but, few managers are naturally as systematic as the MBO system required. According to Fowler, in today's fast moving world, any idea that effective performance management can be tied neatly to a single annual date

is absurd (49).

Secondly, there was only limited recognition of the importance of defining the organization's corporate values and goals. The main emphasis of MBO was on the role of the individual line manager. This caused inconsistencies with other departments within the organization. Often, conflicts resulted with different departments going in separate directions, ultimately deterring the organization (49).

A third component which caused MBO to fail was distrust. Line managers perceived the MBO system as "being owned" by management development specialists. Often any new techniques were seen by line managers as an unwelcome addition to an already heavy managerial load. The line managers viewed MBO as something imposed on them as opposed to a technique to be used by them. Systematic objective setting consequently became a once a year exercise which would have little relationship to what the manager actually did on a day to day basis. The yearly reviews could not keep pace with the fast changes that occur on a day to day basis (49-50).

Fowler also believed that MBO puts an over

emphasis on quantifiable objectives to the detriment of important qualitative factors. The final factor that limited the effectiveness of MBO was that it was too top heavy administratively. Form filling would ultimately become an end result in itself (50).

What can be observed from the review of the above articles is that MBO can be perceived entirely differently by two people. The purpose of the above reviews is to give a foundation of how MBO can be changed, manipulated and viewed by different individuals. The real test as to the effectiveness of MBO will be revealed in the empirical literature. These reviews will deal only with studies and experiments that provide hard data on the effectiveness of MBO, as opposed to articles that have been written with a previously conceived notion and agenda by the authors.

One item that will be readily noticed about the following empirical literature is that the average age of the articles is relatively old. This stems from the fact that had been previously noted in chapter one that MBO reached its pinnacle during the seventies and eighties. With that, the majority of research studies

naturally were performed during that time period.

One of the earliest empirical studies on MBO was performed by A.P. Raia. Raia attempted to measure the change in output of 112 managers and supervisors after the implementation of a new MBO system. The study was performed in 15 separate plants of the Purex corporation. The initial study covered a 10 month period (Raia 33).

Initial goals were set for performance standards at the beginning of the study. These goals were ultimately revised as the study proceeded, but all 15 plants exceeded the preset goal standards for production. In addition, improvements in absenteeism, accidents, grievances, turnover and customer service also became apparent. The amount of improvement ranged from 33% for absenteeism to 80% for accident reduction (35-39).

A second study was done by Raia using the same company as above, but was extended to cover an additional 12 months of data.

The additional data indicated a stabilization of productivity at the higher levels attained during the earlier period. This increase in productivity

contributed to a significant improvement in the attainment of budgetary goals and company overall profits (55).

The major problem associated with Raia's studies was there was not a control group. The performance improvement was a slow and gradual process over a period of months following the implementation of the MBO program. Thus, it is impossible to determine if the improvement was due to extraneous conditions which were unrelated to the MBO program.

One experiment by French, Kay and Meyer (1966) was conducted on the MBO system of the General Electric Company. The goal of the study was to determine what effects different types of goal setting had on performance. The experiment consisted of interviews with 92 low-level managers. A random selection of the managers divided them into two groups. One group used standard goal setting with the MBO structure where the employees were involved in determining their ultimate goals. The second set of employees were assigned goals by their supervisors (French, Kay, Meyer 5-7).

The results showed that performance almost doubled in the group that practiced the participative MBO goal

setting, as opposed to the group that was assigned goals. In addition, the criticisms of the participants' supervisors were less in the group that participated in the goal setting as opposed to the group that were assigned goals (17-19).

Two of the early pioneers who took a great interest in conducting experiments and studies dealing with MBO were Henry L. Tosi and Stephen J. Carroll.

Tosi and Carroll cite the increasing popularity of MBO but noted that there was very little data that supported its usefulness. The purpose of their initial study as defined in their written work stated:

> For the most part, management by objectives has been implemented on the basis of its apparent theoretical practicability and advantages. There has been only limited research examining its effects (Tosi, Carroll 416).

Thus, their purpose was to determine if the MBO process actually had a positive or negative effect on an organization and what caused these effects. The method of the study was performed in two parts. The first part was the analysis of in-depth interviews with 48 managers at all levels of an organization ranging from Vice President to Foreman. The second part

involved a mail questionnaire that was distributed to 150 managers in the company. The company used was a large unidentified manufacturing concern which had national sales and locations throughout the United States. The key point that the researchers were trying to determine from the subjects was the determination of the effectiveness of the newly implemented MBO system (Tosi, Carroll 418).

While the results were generally positive, some problems were uncovered. In order of occurrence the top statements about the MBO system were, 1) I know what is expected of me (58.6%), 2) There are excessive formal requirements (43.7%), 3) It forces planning and setting target dates (41.6%), 4) It forces boss/subordinate feedback and communication (31.2), 5) Not used to full potential (419-423).

The overall supporting correlation coefficients showed a positive relation between the MBO system and the achievement of positive personal results which ultimately lead to positive corporate results (r=.46) (423).

The summary of the study by the authors cited that there are practical limitations to the effectiveness of

the MBO system that was studied. Although the perception by managers was that the MBO system provided a sound basis for the management of the business, it could be improved upon. One of the necessary conditions to obtain benefits from the system is that it simply has to be used and should be used to its full potential. The authors also feel that constant review is needed to insure that the program fills a legitimate need in the organization, and more importantly, a need which operating managers sense exists (426-427).

The overall results of the study by Tosi and Carroll were deemed somewhat inconclusive. Perhaps this is what motivated the authors to proceed with their second study, which follows.

The second experiment conducted by Tosi and Carroll used the basic structure of their original study but took care to obtain data in greater detail. This study was designed to determine if the application of an MBO system produced positive results and how different applications of installation of the system affected different employees (209).

A large national manufacturing firm that had recently installed an MBO system to replace a "trait-

orientated" appraisal system was used for the study. Individual managers were left to their own initiative in implementing this new system and reportedly carried it out in different ways (210).

A sample of 150 managers in the company were randomly chosen to receive questionnaires. The managers comprised all levels and functions of the company. Of the 150 questionnaires administered there were 134 replies. Of those replies, 129 questionnaires contained useable data (211).

The questionnaire consisted of 50 items that were constructed to deal with the recently implemented MBO programs. The majority of questions contained 5 alternative answers. Generally, items were grouped into sub-scales and summed for purposes of analysis (211).

One of the major difficulties in this type of research is defining criteria as to what is program effectiveness. The authors used the following sub-scales in evaluating the definition of effectiveness of the MBO system; 1) effort increase, 2) management by objective orientation, 3) goal success, 4) change in boss behavior. Each of these sub-scales were further

defined and broken down into finer details, but the calculation of coefficients were based upon the broad set of criteria as listed above (211-216).

Three of the four variables showed a significant positive correlation to improved program effectiveness. MBO orientation showed a strong positive correlation of (r=.50). Goal success was reported to be improved with a positive correlation of (r=.20) while change in boss behavior correlated out to (r=.26). The only set of criteria that had a negative correlation with the positive implementation of the MBO system was effort increase. This criteria showed a negative correlation of (r=-.23) (216-218).

This study indicated that the implementation of an MBO system can have many positive effects. But, by definition of the authors, more detailed research still needs to be conducted to develop a more definitive answer as to how, why and to what extent will the implementation of MBO benefit an organization (222-223).

John M. Ivancevich, a professor of organizational behavior and management at the University of Houston, became intrigued with the MBO process and wrote many

articles on the subject. Ivancevich's study dealt with 4 major areas of research: (1) To present the underlying premises of MBO and relate them to a contemporary motivation theory; (2) To outline the mechanics of management by objective programs currently being utilized by two medium-sized business organizations; (3) To report findings of the satisfaction attained by participants in these firms; and (4) To draw implications from the results of this study. (Ivancevich, Donnelly, Lyon 139) Ivancevich noticed the vast increase in the use of MBO and reasoned that there should be numerous empirical studies to support the assumptions associated with MBO. This was not the case, as most of the existing literature was highly descriptive in nature and thus motivated him to conduct this study (139).

This experiment was set up as a classic pre-test, application, post-test experiment. Two companies were used (their names remained confidential) one consisting of approximately 4,000 employees and the other of approximately 4,700. Before MBO was initiated at both companies, managers were asked to complete the Porter job satisfaction instrument. This instrument was

deemed reliable and had been used in numerous research studies which dealt with perceived need satisfaction of managers (140).

The questionnaire used five categories: security, social, esteem, autonomy, and self-actualization. Twelve need items were grouped under each of the five categories. Each item used a 7-point Likert scale to make the necessary ratings. The larger the score, the less the satisfaction (145).

Interviews were used to acquire an understanding of the general reactions of managers to the implementation of the MBO system at each facility. The results were summarized into average need deficiency scores and organized into tables. The data was also sorted into three categories of top management, middle and lower level management (144-147).

In reviewing the findings of the study and information obtained, a number of conclusions can be drawn. First, the need satisfaction of participants is greatly influenced by the implementation of the MBO system. The questionnaire and interview data indicated that perhaps the most efficient manner to implement MBO is to allow top management to explain, coordinate and

guide the program. The results of this study indicate that when top management was actively involved, positive results filtered down to improve the need satisfaction at lower levels of management. (148)

A second finding indicated that more attention needs to be given to how the MBO program is implemented. Company "A" implemented the program by upper level management as opposed to company "B" which implemented the program through the personnel department. The need satisfaction figures show, especially in the self-actualization and security need categories, that managers below the top level report significant improvement from company "A", with less improvement being reported in company "B" (148).

A third finding supported by the data indicate that the exact number of feedback sessions between supervisor and subordinate needs to be set on an individual firm basis. There can not be a set formula applied to determine what will provide the ultimate in need satisfaction. The authors note that, in this present experiment, need satisfaction increased as the number of feedback sessions increased, but cautioned on how that data is interpreted. They noted that to

determine whether the method of implementation or the frequency of feedback, or both, are responsible for significant improvement must be determined by a more controlled experiment than the present design provides. (148)

Ivancevich offers up a final perspective derived from this experiment that he feels needs to be addressed. That point being that proponents of MBO have a tendency to sweep aside the negative reactions of participants. The current study indicates that participants have strong feelings about the faults of MBO. The common complaints which surfaced are the excessive time spent on counseling, the overemphasis on quantitative goals, and being out of the mainstream of the program. The complaints resulted in anxiety and frustration among some participants (149).

The authors summarized the results of their present experiment as follows:

> The management by objective application can provide organizations with an approach which can lead to many positive consequences if utilized correctly. The results of this present experiment indicate that the manner in which management by objective is implemented and the frequency of feedback had some impact on the perceived need satisfaction of participants. The results

> also show that major problem areas remain and some appear to be inherent in the management by objective approach. Only by scientifically investigating ongoing management by objective programs can a complete body of knowledge concerning the benefits of the approach be developed. Hopefully more empirical studies will be conducted and reported to ascertain the full potential and weaknesses of management by objective programs (150).

In what was essentially a follow-up study to the above experiment, Ivancevich measured need satisfaction in the two companies 18 to 20 months after the implementation of the MBO program.

The research reveals that the gains that had previously been made by use of the MBO system had deteriorated. Ivancevich found that any improvements in need satisfaction were short-lived and had disappeared by the time of his final measurement (Ivancevich 130).

The author attributed this extinction phenomenon to a lack of sustained support by top management. In addition, he notes that no follow-up or reinforcement training was given after the program was initiated. Ivancevich feels that these two aspects need to be in place in order for the effects of need satisfaction to be long-lived (138).

Donald D. White attempted to determine what factors affected employee attitude toward the installation of a new MBO system. According to White:

> The exact purpose of this research was to assess the reaction of participating managers to a recently installed management by objective system and determine what factors might be responsible for positive or negative attitudes toward it. Specifically, variables related to the system itself or to its effect on selected aspects of organizational life were examined (White 636).

This study was conducted in a state health-care facility which employed 1,025 persons. The primary data-gathering device was a forty-one item questionnaire administered to the 195 managers of the facility. The study was performed 18 months after the MBO system had initially been installed at the facility (637).

The questionnaire contained eight classification questions, twelve open-ended questions, and twenty-one scale items using bi-polar adjectives. Statistical techniques employed included simple correlation analysis, factor analysis, and multiple correlation analysis (637).

The results revealed that employee attitudes

toward the MBO system were definitely favorable. Sixty-eight point nine percent of the respondents indicated that they had a favorable or very favorable attitude toward the program, while only 4 percent suggested that they viewed the MBO system unfavorably (638).

Of the 4 percent of respondents who reported a negative opinion toward the MBO system their reasons were: 1) The necessary integrated efforts of "team concept" were perceived as not forthcoming, 2) Unrealistic objectives were set, 3) Some objectives that were accepted by subordinates as being realistic were not always achieved (which ultimately resulted in a low opinion of the effectiveness of the MBO system), and 4) The entire program of MBO simply did not meet their expectations in terms of anticipated changes and improvements in their own work areas (639-640).

Numerous reasons were given by respondents why they had a favorable reaction to the MBO system. Some of the more statistically significant ones included that the achievement of objectives was profitable to personnel as well as to patients through improved living and working conditions. Additional comments

stated that organizational resources were better allocated to where they were needed. Knowing what was expected and clearer areas of responsibility were also sighted as positive aspects of the MBO system. Increased contact with supervisors and others in the department created more meaningful communication which created a positive attitude toward MBO (640-641).

A study by W.W. Ronan looked at how goal setting within the MBO framework affected the quantity of output.

The study measured output of work done by 1,184 logging crews from 292 independent pulpwood producers. A factor analysis of the data obtained revealed that the use of MBO goal setting improved performance as compared to a management style that had no formal goal setting. The data also revealed that this was only true under the conditions that the workers who had the specific goals were closely supervised. The study showed that if the workers were not closely supervised, the effect of MBO type goal setting had no substantial effect on quantity of output (Ronan, Latham, Kinne 303-304).

The authors interpreted their findings as

supporting the conclusion that MBO goal setting does not affect performance in an industrial setting unless a supervisor is present to encourage goal acceptance. The authors acknowledge that a limitation of the study is that they were correlational in nature, and inferences about causality could not be made with confidence. This led to a second study involving a control group (307).

In order to overcome the limitations of their first study Latham and Kinne did a second study in the same type of environment.

Twenty separate pulpwood producers and their crews were chosen at random. These crews were then randomly divided into two groups. The first experimental group was trained in the use of MBO goal setting techniques while the second group or the control group continued to work under the original management structure with no change (Latham, Kinne 188).

Data was then compiled on the actual number of cords per man day of work that were produced. The data was compiled over twelve consecutive weeks. Analysis of variance revealed that those who received the MBO goal setting techniques had a significant increase in

production as opposed to the control group. The authors concluded that the effects of MBO goal setting were the chief cause of the increase in performance (190-191).

A different type of research project was undertaken by Tosi and Carroll. They realized that the implementation of an MBO system is a complex task and that numerous variables are involved which are peculiar to each organization. They attempted to first measure what happens when an organization moves into MBO, finds some problems, and attempts to correct them. They endeavored to devise a systematic approach that an organization would use to first identify the problems with the newly installed MBO system and how those problems can be addressed to adequately correct them.

Their research project consisted of two parts, the first being called the "Diagnostic Effort." This part was intended to provide some data to be used in improving a newly implemented MBO system. The data was collected by way of in depth interviews and with a questionnaire. The questionnaire consisted of 47 items describing some aspects of MBO, or the situation in which it was used. The respondents could select any

one of five answers ranging from always to never. The items covered the general topics of goal characteristics, feedback characteristics, perception of the superior, perceptions of organizational support for MBO and reactions to MBO (Tosi, Carroll 57-58).

The second stage of this research project was called "The Change Program." This involved the identification of problems that were apparent from the data collected. Although most of the feedback obtained was positive, the following items were identified as needing attention: 1) General lack of awareness of the rationale and value of the management by objective approach, 2) There was insufficient mutual goal setting, 3) There was not enough time spent on periodically reviewing performance during the year, 4) There was a feeling that the management by objective program was too rigid and formal, 5) There was inadequate knowledge about top management goals, and 6) Superiors and subordinates lacked understanding of how to set goals and targets (58).

After identification of the problems, the following steps were outlined to be the blueprint to solve initial problems associated with the

implementation of an MBO program. The first step was to retrain the MBO process to top management. This included in depth discussions of the rationale of MBO. The second step was to introduce new and revised MBO documents. These documents were designed to better meet the needs of the individuals who were using them. The final step was to arrange goal setting meetings. These meetings involved subordinate and supervisor direct interaction. Then in turn the supervisor met with the vice president in charge of that department, who would ultimately meet with the chief executive (59).

To evaluate the impact of the change attempt, the survey questionnaire used in the analysis of the earlier MBO program was administered one year after the change effort had been made. In addition, thirty-eight managers were interviewed at length to obtain additional information which could be used in assessment of the change program (58-59).

The data was then analyzed using mean scores for each item from the first and second questionnaires. Differences between means were analyzed using t-tests. For the interview study, responses were coded by the

investigators (59-60).

The results of the analysis showed very statistically significant figures. Every category showed an improvement in results. The average increase in perceived effectiveness of the revised MBO system was approximately forty percent (62).

The conclusion that can be drawn from this study is that no matter how carefully an MBO system is planned it will be perceived differently in every organization. What the authors are suggesting is that a similar type "diagnostic change program" be administered to newly implemented MBO systems. Due to different organizational cultures and values an MBO program cannot be simply pulled off the shelf and applied. This diagnostic process should help the MBO system become more suited to the organization which it serves (65-66).

The authors add a note of caution about their summary. They state that there are some limitations to a field study such as this, due to the fact that there may be other ways to interpret and explain the authors' results (66).

The use of MBO has also been studied in public

operations. Writing in the July 1974 issue of "Journal of Business Research," Donald White addressed the issue of MBO in a public institution.

The organization selected for his study was a moderate-sized mental retardation facility located in a midwestern state. The study was performed eighteen months after a new MBO system had been implemented. The information used for this study was gathered through the use of a personally administered questionnaire. In addition to the questionnaire, unit records were reviewed to determine performance levels and goal achievement with the separate departments. The Pearson product movement test of significance was used to determine relationships between variables (White 290-291).

The study focused on several key points to determine how they were affected by the implementation of a new MBO system. The major areas included the effect of MBO on formal contact between supervisors and subordinates, satisfaction with change in amount of formal contact between supervisors and subordinates, change in the amount of personal responsibility, change in self-control on the job as a result of the

management by objective system and, degree of satisfaction or dissatisfaction with the amount of information received about total operations (292-299).

Each and every area study showed a positive correlation between the actual outcome and the desired outcome that the MBO program had hoped to obtain. The overall effect on improving employee satisfaction with the newly implemented management by objective system had a substantial positive relationship ($r=.64$, $\#P<.01$). Attitude toward the MBO program was also favorable for almost all managers. A number of reasons were given for the positive attitudes toward the program. However, the most meaningful relationships to attitude toward the program were shown by the two variables: 1) perceived attitude of the supervisor toward the MBO program ($r=.65$. $\#P<.01$), and 2) perceived contribution of MBO to communication ($r=.46$, $\#P<.01$) (299).

The overall conclusions of the MBO program by the employees credit the program with increasing formal contacts between subordinates and their supervisors, improving communications, and causing subordinates to feel more involved in decisions in their own unit as

well as in the whole organization. In addition, the program was believed to enhance performance by focusing attention on both specific goals and on the organization of available resources (299-300).

The author concluded that, in the past, many professionals have been skeptical about applying certain management practices such as MBO in facilities which deal with medicine and its applications. He infers that due to the empirical nature of this study, the application of a MBO system can be highly productive. He does note that the generalizations from this study are limited in that the results are reported for a single organization only. He concludes that more experience and further research with regard to the utilization and impact of MBO type systems on predominately professional groups and the use of such programs in contingency planning appear warranted (301).

As management by objective became more prominent as a viable management tool in the mid 1970's, other types of organizations (other than private business) adopted it in an attempt to improve performance and improve morale in their organizations. Studies of MBO

also surfaced such as the article above which dealt with health care. The following study tested the effectiveness of an MBO system in a university.

Carlisle and Shetty attempted to apply and evaluate the concept of MBO in an academic environment. More specific objectives of the study were to identify the reactions of participating faculty members to a management by objectives program and to assess the degree of variation, if any, in the reactions of faculty members based on differences in professional rank, status of tenure, length of service, and academic discipline (155).

The study was conducted in a public university employing roughly 600 faculty members and having an enrollment of approximately 9,000 students. The principle method of data collection was an in-depth questionnaire administered to participating faculty members after the MBO program had been in place for one year. Of the 236 questionnaires that were distributed, 117 were returned, of which 109 had useable data (n=109). Each question contained ten sub-parts relating to different criteria hypothesized to evaluate the success or failure of the program. Each response

had a five-point scale to answer, from significant improvement at one extreme with an assigned value of five, and significant decrease represented at the other extreme corresponding to a value of one (155-156).

The following is a brief summary and the percentage of faculty who rated the MBO system as creating improvement and the percentage who viewed a decline caused by the MBO system (represented in brackets) in their respective area: A) Understanding of department goals and priorities 46.7%, (4.7%), B) Help in career planning and developing professional objectives 43.4%, (5.7%), C) Understanding of department expectations 39.1%, (3.8%), D) Accuracy with which performance was measured 37%, (5%), E) Performance (Productivity) 33.9%, (5.8%) F) Support received from the department 30.7%, (7.5%), G) Commitment to the university 27.1%, (4.9%). All the other areas of concern also showed similar positive results (Shetty, Carlisle 156).

By use of mean scores, standard deviations and f-ratios to determine the relationship between selected organizational variables and perceived success of the MBO program, similar results were found to have

occurred. More specifically, teachers with lower academic rank, teachers without tenure, and those with fewer years of service consider the program in more positive terms than those of higher rank who are tenured and have more years of service. No significant connection was found between academic discipline and perceived success of the program (159).

The authors concluded that the study showed that programs like MBO, when applied in an academic setting, can increase awareness of organizational goals, improve planning, result in better understanding of job expectations, provide better data for performance appraisal, and improve performance and communication. Furthermore, by implication, the study suggests the need for tailoring the program to the differing organizational status of the participants (Shetty, Carlisle 159).

One of the most in-depth empirical studies on MBO was done by John Ivancevich. The present study is an empirically based longitudinal study of performance in a manufacturing company using MBO. The study was designed using a multiple time series quasi-experimental research design. The study was conceived

with this basic premise in mind: there will be significant improvement in experimental plants, relative to the comparison plants after the MBO program is implemented, within six months after implementation (Ivancevich 563-564).

The study was performed at the three largest plants of the Palos manufacturing company. Plants one and two were the experimental plants and plant three was the control or comparison plant. The research design used five data collection points, time zero (prior to MBO implementation), and every six months after the implementation out to 36 months total. The units measured were the quantity and quality of job performance, expressed as a percentage of engineering standards. An ANOVA program and Duncan's multiple range test were used to examine the data of the three plants statistically (567-570).

The results indicate that immediate improvement in both production and quality occurred in the experimental group. This goes against previous assumptions that there may be a time lag period required before the implementation of an MBO program can produce positive results. In all areas measured

there were significant increases in performance as compared to the control plant. The one negative that was unexpected was that the number of grievances in the experimental group changed in a direction opposite to that anticipated. The number of grievances in the experimental group increased in relation to the control group. The reason for the higher grievance rate cannot be explained, since no other major change in organization or personnel occurred in these plants (570-571).

Ivancevich concluded that generally the present research study showed that improvements in the experimental production units occurred earlier than was expected, and that the experimental groups showed significantly better performance measures than that of the control group. The biggest increase in production was found to occur between the 12 and 18 month time period. Ivancevich states that longitudinal assessments of MBO are necessary out to 20 years to scientifically derive answers to MBO critics. Only after studies that include that length of time can the costs and benefits of the MBO approach be validly determined (573).

Latham and Baldes performed a quasi-experimental study on the effect of MBO on unionized truck drivers. The unit of measure in the experiment was the percentage of weight that the truck drivers were able to obtain on their trucks. Through the MBO process a goal was agreed upon and set to equal 94% of the legal limit. The average for the unionized truck drivers had been 60% of the legal limit. This represented a substantial increase in work performance (Latham, Baldes 188).

The results were tabulated over a nine month period. The results obtained over the experimental period calculated out to exactly 94% of legal weight, the same as the agreed upon goal. This resulted in a savings of over one million dollars to the company (190).

The authors attribute the performance improvement primarily to the use of formal goal setting within the MBO process. They also suggest that this goal setting may have led to informal competition among the truck drivers, and that this competition probably helped maintain goal commitment over the nine month period (191).

Bruce Kirchhoff conducted a study that seems basic, but is often overlooked by other researchers of MBO. Kirchhoff states that in all the previous research on the effectiveness of MBO, it is assumed that since MBO is taught to management that they actually use it. The author researched whether MBO actually exists in an organization that has a formal policy of using MBO. To do this, the author states that it is imperative to measure MBO use within an organization to identify the relationship between the causal variables and manager's performance, the resultant variable (Kirchoff 351).

The study is based on the use of the "Managerial Style Questionnaire" (MSQ), which is designed to measure the use of MBO within an organization. The MSQ is also very useful to measure goal use within the organization, which is a major component of the MBO system. This instrument has been shown to have both content validity and construct validity (354-355).

The results of the questionnaire were used to construct multi-train/multi-method matrices. The matrix showed a strong convergent validity for all items with correlation coefficients equal to or greater

than .48 along the convergent diagonals. Discriminant validity is also apparent as the correlation coefficients along the diagonals are substantially larger than those in the heterotraitmonomethod triangles and the hetertraitheteromethod triangles. The test-retest reliabilities are also in the acceptable range although several key items were smaller than desired (356-357).

The resulting data from this experiment are contrary to the accepted theory that MBO training and goal setting insure goal use. Thus, if goal use is an imperative link to performance, goal setting may be dysfunctional in some organizations if it consumes managers' time and energy without contributing to performance. Simply stated, the author concludes that simply having a formal MBO system does not insure its proper and correct use to obtain the maximum benefit (363).

Kirchhoff concludes that MSQ is a valid and useful instrument for measuring goal use. It also is a valuable diagnostic tool for MBO, since it measures the extent of goal use within any organization. It can also be used as a valuable tool to determine if the MBO

system is properly functioning. It should not be assumed that a MBO system automatically leads to goal setting and enhanced performance. The use of MSQ should be used to appraise the need for MBO training or to measure the impact of training in MBO upon the organization (364).

A study to measure the effect of an MBO system on first line female supervisors was conducted by R.M. Steers.

Steers study used a detailed questionnaire to collect data on task-goal perceptions of first line supervisors who were actively involved in an ongoing MBO program. One hundred and thirty-three female first line supervisors were used as the experimental group. In addition to the questionnaire, information was gathered from the managers of the first line supervisors (Steers 393-395).

In analyzing the data, Steers found that goal setting within the MBO system led to a significant correlation with the attempt to obtain the goals. It was determined that when the goals were participatively set, the first line supervisors made a significant attempt to obtain these goals (396).

While effort increased in an attempt to achieve the predetermined goal, the overall rating of general performance was not significantly affected. The supervisors were making extra effort to achieve the goals, but this effort did not seem to carry over to other aspects of their responsibilities. Steers also found that these relationships were moderated by the supervisor's need for achievement. Goal specificity was significantly correlated with goal effort and overall performance only for those supervisors with a high need for achievement (399-402).

A second study, done by Latham in 1975, involved the measurement of MBO goal setting with no formal means of goal setting. The experiment involved both educated and uneducated workers in a logging environment (Latham, Yukl 301-302).

The experiment involved 5 distinct groups of logging crews. The groups were divided up at random. Four of the groups then received formal MBO participative goal setting training. The fifth group was the control group (301).

The results showed that only one of the four groups which had the MBO participative goal setting

performed better than the group that had no formal goal setting. The authors noted that some problems in the implementation of the goal setting program such as a lack of support by management were likely reasons for the failure of MBO (301-302).

A experiment published in 1977 by The Academy of Management Journal attempted to measure the effectiveness of MBO goal setting as opposed to no goal setting or assigned goal setting. The study was done by John Ivancevich.

Ivancevich offered three hypotheses which he wanted to test with this experiment: 1) The skilled technicians in the assigned and participative goal setting groups will perform more effectively and be more satisfied than the comparison ("do your best") group of skilled technicians, 2) The skilled technicians in the participation goal setting group will perform more effectively and be more satisfied than the assigned goal setting group, and 3) Although both the assigned and MBO type of goal setting groups will show performance improvements and increased satisfaction, the gains will diminish over the 12 month period (Ivancevich 409).

The subjects of the studies were from three of seven medium-sized equipment plants in the southwest region of the country. Fifty-eight skilled technicians and eight supervisors from plant one were given training in participative goal setting. This group was designated as the experimental group. Fifty-nine skilled technicians and nine supervisors from plant two were trained in a MBO participative goal setting program, and sixty-two skilled technicians and eleven supervisors from plant three were used as a comparison group who were instructed to "do their best." A group of 15 randomly selected skilled technicians and five supervisors in a fourth plant served as a resource unit. This group generated ideas, training material, and exercises for the two formally trained goal setting groups (409).

The study used four data collection points, pretreatment, six, nine, and twelve months after treatment. Performance measures that were used included unexcused absences, service complaints, and cost of performance. The Job Descriptive Index (JDI) was used to assess the job satisfaction of the skilled technicians (411-412).

A number of analyses of variance with repeated measure tests were performed for each of the performance criterion. Following the co-variance analysis, the overall regression coefficient between the pretreatment and posttreatment measures were performed to get means and adjusted means of performance criteria for the three goal setting treatments (413).

The results reveal that both MBO participative and assigned goal setting are superior to "do your best" type of management style. These results tend to support hypothesis one. The results are also consistent with other field studies which showed that goal setting groups performed better than non-goal setting groups (417).

In reference to hypothesis two, the author found this study to favor assigned goal setting procedures over MBO participative goal setting procedures. Hypothesis two suggested that the MBO participation goal setting participants would perform more effectively and be more satisfied than their assigned goal setting counterparts. The author suggests that the reason for the rejection of hypothesis two in this

study could be due to the typical procedures used in the organization. The MBO goal setting procedure may be so different than what the skilled technicians and supervisors are used to, that it is not sustained over a period of time such as nine or twelve months. Prior to the training, the technicians were always told to simply do their best (417).

The findings reveal that hypothesis three, which suggested that initial performance and satisfaction improvements would diminish over the duration of the study, was found to be valid. The findings indicate that for at least six months both the MBO and assigned goal setting groups were superior to the comparison group. However, there is a large decline in both measures after about the ninth month (418).

Ivancevich suggests that it seems reasonable that reinforcement programs or refresher training are needed to sustain task performance and satisfaction improvements. He suggests that the type, intensity, duration, and degree of reinforcement or retraining need to be studied in organizational settings (418).

Up to this point many studies have been performed measuring the productivity of MBO. By definition, MBO

can also fulfill many other useful purposes within an organization. One such study evaluated the effect that an MBO system has on Maslow's need hierarchy. The hypothesis that was tested in this study was that Maslow's higher level needs (self-esteem, autonomy and self-actualization) will be characterized by lower levels of deprivation following the introduction of a program of management by objectives (Timm, Strauss, Sorensen, Babcock 71).

The data collection instrument was a Porter-Lawler needs questionnaire which was developed to measure need satisfaction. This questionnaire has been extensively used in studies of need satisfaction and is believed to provide valid data. The population of the study was 44 employees with 5 community service organizations (71).

Results of the study indicate that in almost all categories of Maslow's higher level needs, there was a significant decrease in deprivation scores. In fact, the only category in which change was not reported was security. T-ratios were used to determine the levels of significance. It was noted that, in each category, the majority of individuals indicated there was no change in need deprivation. Difficulty in recalling

may account for the high number of subjects indicating zero need deficiency before the program. Or, it may be that in fact most subjects experienced high levels of job satisfaction prior to the experiment. Thus, the program may have a different impact in organizations characterized by higher levels of dissatisfaction (74).

It was, however, noted by the authors that significant decreases in need deprivation were found for every higher level need. This pattern is consistent throughout the results and may indicate that the program had a very selective but powerful impact. As noted, many indicated there were no changes caused by the MBO program, but the overall results showed substantial change. Thus, those who were affected were greatly affected in the change in need deprivation (71).

The authors add caution in viewing these results. They state that this was not a true longitudinal study, and the fact that the subjects were required to recall previous need levels may well have affected the results. This is especially true considering such a large number of respondents reported no change in need. Or possibly, that there was quite a large number of

employees that had experienced very high levels of job satisfaction prior to treatment. The authors suggest that further studies be performed to examine these possibilities (71).

A follow up study to the above was printed in the forty-first volume of Psychological Reports. This study conducted by Sorensen, Babcock and Hasher was designed to circumvent the previously encountered problem of the unreliability of the respondent's recall in the measurement of change in need satisfaction. A previously unanticipated problem did become evident in the review of the findings. There is no reason to believe that respondents reporting a lack of need deprivation prior to the training should report changes in satisfaction. Thus, the only change which is possible in the study is a negative change. The way the study was designed left no means for identifying and determining the influence of satisfied respondents. This would require the identification and matching of individual responses before and after training, so the change among dissatisfied respondents is probably understated. This, according to the authors, requires consideration in future research (Sorensen, Babcock,

Hasher 646).

A separate study which looked at goal setting as part of the MBO system attempted to analyze the effects of goal setting on performance and job satisfaction. This study by John Ivancevich, which was published in the Journal of Applied Psychology dealt with three types of goal setting. The first was participative goal setting which is used in the MBO process, the second was assigned, and the third was no goal setting, which served as the control group (Ivancevich 605).

The subjects of the study were 37 sales personnel who were trained in MBO type goal setting, 41 sales personnel who were trained in assigned goal setting, and a third group of 44 sales personnel who served as a comparison unit. Four measures of performance and two measures of satisfaction criteria were used to evaluate the results of the different goal setting procedures. Data was collected at four separate points in time, the first being the baseline (time zero before any training was performed). The next data collection point was at six months, nine months and twelve months after the training was complete (605-608).

Performance was measured by a series of 4 separate

job related criteria which included call frequency indices, orders per call ratio, direct selling costs and market potential. The reliability of the four quantitative measures were determined by using a test-retest paradigm for each of the four data collection periods. In all cases, the reliability coefficient for the measure was .80 or greater. The inter-correlations of the four quantitative performance measures ranged from .13 to .41 (608).

The job satisfaction portion of the study was measured by the Job Description Index. The Spearman-Brown reliabilities for the measures all fell between the .77 to .80 level of reliability. These levels of reliability for the work are within reasonable levels of acceptability (608).

Two sets of tests were used to evaluate the data. The first set was the Duncan's multiple-range test to examine the data of the three groups. The baseline measure of the three groups were tested by use of the analysis of variance test (609).

The findings of the study reveal that, in a sales setting, both the MBO type of participative goal setting and assigned goal setting were superior to no

formal goal setting. The results also suggest that the MBO type of participative goal setting was not superior to assigned goal setting. There was no significant differences in the accomplishments between the two types of goal setting. A second significant point that was evident is that after twelve months the difference between the MBO goal setting and no formal goal setting became less meaningful (610-611).

The study suggests that goal setting as part of the MBO process may lead to immediate results as opposed to no formal goal setting, but that this improvement in performance and job satisfaction can deteriorate over time. The author points out that this study should not be viewed as being representative of all MBO programs that deal with goal setting. No single field study involving only approximately 100 sales personnel can provide such evidence (612).

One experiment attempted to measure whether the effects of the implementation of an MBO system were really caused by the MBO system itself, or were the changes only perceived to be a result caused by the MBO system.

In a study by Tosi, Hunter, Chesser, Tarter and

Carroll, the authors, state that there has been a fairly large body of empirical evidence which supports the general notion that MBO has positive effects on the attitudes and performance of managers who function with it. They hypothesized:

> That first, changing to MBO requires a number of changes, so that one cannot be certain which of the many changes is related to the MBO system. Second, not all the changes induced by changing systems are those envisioned by the investigator. For example, MBO instructs managers to set up a method of evaluating performance objectively, but many managers will couch their performance objectively in such terms as to preserve the earlier subjective evaluation. Finally, the change to MBO may induce changes beyond those in the management system designed for the organization. For example, in order to institute MBO, a department may make its first formal job-by-job assessment, and as a result may make sweeping improvements in its functioning (Tosi, Hunter, Chesser, Tarter, Carroll 276-277).

Two organizations were used to obtain the data for this experiment. Organization A was a large manufacturer of power tools. The questionnaire was administered to 73 managers at two different times, 18 months apart. Organization B was a manufacturing division of a large conglomerate and has an ongoing MBO system. The questionnaire was administered to 117

managers, again 18 months apart (279).

The questionnaire was a 50-item form containing a priority sub-scales assessing goal, feedback, superior-subordinate characteristics, and end-result variables. The results of the questionnaire were cluster-analyzed to develop empirical scales. Scores before and after, as well as change scores were computed for each scale and all were correlated. Cross-lag correlations were computed, and an effects diagram was developed (279).

Several mathematical models were derived to explain the pattern of the correlations. Of the seven general factors developed from the questionnaire, 5 of these seem to comprise the validity of MBO as the overriding factor for the reason of change. These five variables were: 1) supervisor-subordinate relationship, 2) clarity and relevance of goals, 3) orientation toward MBO, 4) performance-reward association, 5) job satisfaction (300).

The authors offer up several possible interpretations of the results. These results could represent the manager's satisfaction with their life or lifestyle. It could be the manager's attitude toward work and the environment in which that work is

accomplished. It might be designated as the manager's attitude toward the mastery of the job or task assigned. The authors also state that there are other possibilities, and future research can be directed at the discovery and analysis of these and other potential general factors (300).

One study which simply measured the results that occurred after the implementation of an MBO system at one company was done by G. Robert Lea. The company that was assessed was Paul Revere Life Insurance Company. In 1968 work was begun at Paul Revere to study the feasibility of introducing a new form of management system into the company. After much study it was decided in 1970 to develop and implement a new MBO based style of management (Lea 24-30).

A decrease resulted in the total number of employees from 1,200 in 1968 to 950 in 1976. While some of the decrease can be attributed to technical advances, the author feels that most is due to fewer but better people doing more work (30).

The company experienced six record sales years back to back, with each year being better and more impressive than the previous. This occurred during a

general slowdown in the industry as a whole. The advancement came from a better understanding of corporate goals and objectives and a commitment to excellence on the part of everyone as a result of the MBO system (31).

Turnover reduced from 50.2% in 1970 to 16% in 1976. Promotions from within increased to 80% of promotions. This was because of emphasis that the MBO system put on improved individual performance through individual development and goal setting and review. In conjunction with the increased personal performance, corporate work measurements standards showed a rise from 65% in 1970 to 94% in 1976. This was due to MBO establishing more open communication at all levels of the organization, and a better understanding of "where we're going." (31)

A substantial decrease in absenteeism was also experienced. In 1970 the corporate goal was ten days per employee per year. Actual days per employee was about 11. After the implementation of the MBO system the corporate goal was 7.8 days per employee. The actual days per employee in 1975 was reduced to 5.3 (31).

The author also notes that a less tangible, but equally important measurement of success of the MBO program is the general state of morale. It was noted that a substantial downturn in the number and severity of grievances occurred after the MBO system was implemented. What do these results mean? According to the author:

> They mean that MBO works if the desire and the right environment to make it work are there. And that means developing a system that fits a company's situation. The system should be carefully designed, implemented and controlled-and should be as administratively simple as possible. After the educational process takes place, it should be seen, and be, a system that helps everyone do their jobs better-a better way of managing, not an additional burden on management (31-32).

One study that directly measured the productivity results of employees when an MBO system was installed was done by Jan P. Muczyk. Muczyk hypothesized that most organizations adopt MBO on faith or on the basis of unsubstantiated testimonials. Thus, he set out to determine, using a controlled experiment, what the actual productivity results were when the MBO system was installed (Muczyk 318-319).

The study was conducted in a 41 branch bank in

Washington D.C. Thirteen branches were chosen to represent the experimental group in which MBO was implemented. Thirteen comparable branches were selected to serve as the first control group. The employees in this first control group were told that they were part of a study and asked to complete all the psychological instruments employed in the study before it was began and after it was completed. A third control group of eight branches were deliberately held out of the study. These members had no knowledge of their involvement in the study and had no contact with the experimenter. This group was used to measure the magnitude of the Hawthorn effect. Performance measures were taken at three points, one prior to the start of the experiment, six months after the implementation of MBO, and twelve months after the implementation (320).

After the performance data was collected and analyzed, its results were impressive. All the performance goals of the experimental group were either met or exceeded. After the data was summarized the author applied "T" tests to compare the experimental and the control groups. The findings of this analysis revealed that the performance gains by the experimental

group were not significant at the .05 level. The conclusion being that although all 9 of the performance measures produced positive results, compared to the control groups their positive results were not significantly pronounced to be attributed to the implementation of the MBO system (327-328).

The author noted that if he had not used the control group, this study would have been perceived or interpreted as a testimonial on behalf of MBO, although the differences were insignificant (328).

The author suggests that the only way to get a clear picture of the usefulness of MBO would be to conduct an experiment that consists of longer than simply a year of data. The long term effects need to be analyzed. In addition, he suggests that a more precise definition of MBO be tested. He feels that the present definition that he tested is too general. Muczyk is under the impression that the usefulness of MBO has not yet been fully determined, and that the state of very little knowledge about the subject of MBO will continue for many years to come (328-329).

A type of research study similar to the one above was done by Ivancevich (1976) to evaluate the

effectiveness of the goal setting process of the MBO system. This study added one additional variable that Muczyk previously did not use, that being the variable that goal difficulty will be held constant. The study measured the results of assigned versus participatively set goals within the framework of a MBO system.

The study involved sixty employees of a large international corporation. Their task was to solve a set of 300 simple arithmetic problems of not more than two digits. The group that consisted of the assigned goal group were told the number of problems that they were expected to solve. The second group, which was the group that was designed to be using the MBO goal setting process, was asked to suggest a difficult but attainable goal for the number of problems that they would try to solve in six minutes. The test administrator then discussed the suggested goal with each employee. Realistic goals were stressed by reiterating that the goal should be difficult but attainable. Then the final goal was set jointly by the employee and the test administrator (Dossett, Latham, Mitchell 209-291).

There was a significant correlation between actual

goal difficulty and performance on the initial trial (r =.51, p<.001). This also held true across several trials (r = .53, p,.001). The results showed that specific, hard goals lead to higher performance levels than do general goals. Secondly, according to the authors, there is a linear relationship between difficult goals and high performance levels. This study supports the hypothesis of Latham, Saari (1979) that participation in goal setting is important to the extent that it leads to the setting of high goals. Thus, the proper and consistent use of MBO techniques which utilize participative goal setting should ultimately result in higher goal standards being utilized (292-294).

A study measuring the effects of MBO on performance and satisfaction was published in the September 1982 edition of Group & Organizational Studies magazine. The title of the article was "The Effects of MBO on Levels of Performance and Satisfaction Among University Faculty."

The primary measure of faculty members' level of performance and satisfaction was a questionnaire developed by the authors. The majority of items were

drawn from the Job Descriptive Index (Smith, Kendall, Hulin 1969). A second measure was review of faculty members' records of research and service activities for the year prior to the implementation of MBO and the year after the MBO implementation. A final measure was obtained by conducting interviews with departmental heads of the faculty members. These individuals were asked to provide their perceptions of changes in the facility members as a result of the implementation of the MBO system (Terpstra, Olsen, Lockeman 355-357).

The results indicate that levels of performance did increase as a result of the application of MBO. All the data proved to have a statistically significant level increase. The archival and interview data also indicate higher levels of research and service among faculty (363).

In regard to satisfaction, the data indicates that the implementation of the MBO system caused a decrease in the amount of satisfaction among faculty members. A increase in turnover could also be related to this dissatisfaction. One reason stated for the possible negative satisfaction is that individuals who have worked for some time without specific goals may feel

constrained by the addition of goals. In addition, scholars and academicians have traditionally placed much value on individual autonomy, behavioral flexibility and academic freedom. The MBO system may have presented a threat to these freedoms in the perception of the faculty members (363-364).

The authors suggest that based on their findings, academic institutions that are considering the implementation of an MBO system must carefully weigh the trade-offs associated with dissatisfaction versus the increases in productivity. The cost of recruiting and faculty replacement efforts may not be worth the benefits of increased research and service activities. They do suggest that modifications of the MBO technique might be developed that would entail decreasing the degree of structure and inflexibility of the system while still preserving some of the hypothesized advantages of MBO. According to the authors, more research of an empirical nature investigating the effects of MBO on faculty performance and satisfaction is definitely warranted (365).

As has been observed from the above pages, much has been written and discussed concerning MBO. It has

truly become a topic that has divided business people as to its effectiveness as a viable management tool. More than thirty-five years have passed since Peter Drucker first wrote concerning the use of MBO. Since that time, many writers have stated that MBO is used by a majority of firms in the United States (Jun 1976). Several other studies have indicated that MBO is now the dominant form of management in the United States (Giblin, Sanfilippo 1978; Luthans 1976; Odiorne 1979).

In reviewing all the available data concerning the effectiveness of MBO, it is reasonable to believe that the management technique known as Management By Objective is a useful and productive tool for the management of business in today's business environment. While there are several studies that report that MBO is a counterproductive type of management, there are usually overriding variables that caused MBO to be non-productive.

Taken as a package, the basic premise of MBO is sound and reasonable. As the studies that are negative toward MBO point out, the process can not be a "canned" management technique. Each company must take the MBO process and design it to their particular company. The

majority of studies that find fault in MBO cited that it was not properly implemented, or was not given the full support of top management. This should not be considered a testimony that MBO is not an effective technique, but a fault with the company in the way it administered MBO.

Chapter III

SELECTIVE REVIEW AND EVALUATION OF RESEARCH

The studies that will be reviewed and evaluated in this chapter were chosen for their relevancy to the hypothesis. These studies most directly pertain to the purpose of this paper and offer the best research available to evaluate the effectiveness of MBO.

The purpose of the study by Tosi and Carroll was an attempt to determine how management personnel viewed the introduction of an MBO system. The study was done within a large manufacturing firm that produces both industrial and consumer products. The study did not define the term large. It did say that the firm had distribution locations dispersed throughout the United States.

The study consisted of two parts. The first part was an in-depth interview with 48 managers of all levels within the organization. The study did define the number and the titles of these 48 individuals, but it did not list how these individuals were selected. This raises serious questions as to the sampling

techniques of selecting the sample group. The validity of the results of the in-depth interviews could be greatly influenced by hand selecting the participants to meet the particular agenda that the researchers had in mind.

The results of the interview were tabulated using simple percentage techniques. Open-ended questions were asked with responses being grouped into specific topics that tied together. The percentile was then computed as to the number of participants who's answers fell within each group category. The data was tabulated by dividing the number of answers of a particular question segment by the number of total respondents (n=48).

The second part of the experiment, a mail questionnaire was sent to 150 managers in the company. Of the 120 responses there were 98 that had useable data. As above, the technique of sample selection is questionable as the study does not detail how these managers were selected. In addition, the study does not detail how large the total population was from which samples were drawn.

The statistical analysis and calculations were

sound in respect to their validity. Simple percentiles and correlation coefficients were used to rank the results of both the interviews and the questionnaire. The results obtained from the two parts of the experiment tended to support each other with reasonable levels of variance.

Based on the data obtained, the conclusions of the researchers were justified. The data firmly supported their resulting conclusions. The external validity of this study as noted above leaves questions on the results obtained. While the data supports the conclusions drawn, the data is subject to questionable research methods. The basic design of the experiment also offers little in terms of generalizability.

The study by Donald D. White looked at the effect that MBO had on non-profit organizations. Studying MBO in a non-profit organization requires different measures of effectiveness as opposed to commercial enterprises. White felt that a study needed to be conducted to determine if MBO could fulfill the needs of the non-profit organization (White 289).

The organization chosen for the study was a medium sized mental retardation facility located in a

midwestern state. The study was conducted 18 months after the implementation of a new MBO system into the organization. Five organizational units were selected as the focal point of the study (290).

The method employed to gather data in this study was a personally administered questionnaire and personal interviews with managers representing all levels in the hierarchy. The questionnaire consisted of 41 items. This instrument was completed by 195 managers from the 5 organizational units. A total of 114 questionnaires were returned which contained useable data for the study (291).

In addition to the above method of data collection, unit records were reviewed to determine performance levels and goal achievement within the departments. This additional test helped to eliminate possible personal bias that is often inherent in questionnaires.

The data was analyzed using the Pearson product moment test of significance which determined relationships between variables. This, combined with statistical correlation coefficients, provided the basis of the data analysis (White 291-292).

The data collection method used in this study followed acceptable standards. The addition of the tracking of unit data which is not open to bias along with the questionnaire provide a valid set of data to analyze. The sample of 114 sets of useable data provides a significant basis to obtain statistically meaningful results.

The use of the Pearson product moment test of significance was a good choice to determine the relationships between the variables. The study could have gone further by using other statistical tests to further substantiate the results such as the Kendall-tau test.

The structure of the study did not lend itself well to the evaluation of actual performance results attributable to the implementation of the MBO system. The main cause of this was that no universal basis for measuring organizational performance in either hospitals or mental retardation institutions existed at the time of the study. The study did, however, measure and provide valid data on how the MBO system affected non performance data such as: 1) Effect of MBO on formal contact between supervisor and subordinate, 2)

Effect of MBO on change in the amount of personal responsibility, 3) Amount of change in self control on the job, 4) Degree of satisfaction and dissatisfaction of employees (White 293-298).

One of the limitations of the study was that it was only conducted for one year. In order to measure the full effect of an MBO system, this type of data analysis should be conducted over a longer period of time.

A second critical limitation is that no data was collected prior to the implementation of the MBO system. The correlation of the variables definitely show a statistically significant correlation between the variables, but since there was no measure of the variables prior to the implementation of MBO, other outside forces may have contributed to the changes that occurred. This provides some question as to whether the study actually measured what it was attempting to measure.

The conclusions drawn by the researchers based on the data obtained seemed justified. The statistical techniques used to evaluate the data were used properly and used to their best application.

The external validity of data obtained in the study may be questioned, since data was collected via personal interview, and the subjects may have felt that management wanted positive reactions from the employees. While anonymity of responses was guaranteed to all persons completing the questionnaire, it is still conceivable that replies relative to the respondents attitudes toward the MBO system were influenced positively to some degree by upper management, if not in fact by the study itself. This may have had a positive skew of the data toward favorable reactions to the MBO program.

Generalizations of this study are limited to that of a single organization. A broad application may be made to other non-profit organizations, but the correlations from this particular type of study would not be very great to other organizations.

The study by John M. Ivancevich was an empirically based longitudinal study of performance of a newly installed MBO system. This study involved use of a multiple-time-series quasi-experimental research design. Several mathematical processes were used to interpret the data.

This study dealt with three plants of the Palos Manufacturing Corporation. The plants were classified as experimental plant 1 (E_1), experimental plant 2 (E_2), and comparison plant (C). Great care was taken by the researcher to select three plants that were quite similar. At the beginning of the experiment crucial variables of the three plants were similar such as size, span of control, educational level of subjects, location, and the number of levels of management. This detail to selection lends credibility in terms of sampling techniques to obtain valid data (Ivancevich 565).

The research design used five data-collection points. The symbol T_b indicates the time period prior to the implementation of the MBO program, T_1 is the time period 12 months after T_b, T_2 is 18 months after, T_3 is 30 months after and T_4 is 36 months after. The MBO program was introduced in plants E_1 and E_2, with plant C remaining constant with no change in management style (566).

The quantity and quality of job performance in the production departments were measured by averaging weekly production level, expressed as a percentage of

engineering standards. A random sample eight week period average prior to the MBO program serves as the T_b measure. The researcher here again took great care in preserving the integrity of his data by making adjustments to the performance data for items such as leaves of absence, machine down time, and other recorded work stoppages under the control of the operating employees (567).

Ivancevich used strict methods to control the collection of his data. All the data that was collected was objective and left little room for bias or consideration of non-valid data. His attention to the issues of experimental control and sampling technique were effective.

The researcher used a number of statistical techniques to evaluate and analyze the data. Among the primary techniques used to measure the dependent and independent variables were an ANOVA program, Duncan Multiple Range Test and f-tests.

An ANOVA table was first prepared to access the relationship of the variables. The author then used the Duncan multiple range test to assess the changes in the performance measures more carefully. Intragroup

comparisons for the various time periods would be made only when the overall f-tests were significant (569).

The overall analysis of the study seems to be quite valid. Ivancevich controlled his data collection to eliminate any bias or non-representative data. He introduced the control group in plant C in order to compare if the changes that occurred were a result of the MBO program and not due to external forces. The use of the ANOVA tables showed that the changes in data were indeed significant and were further substantiated by the introduction of the Duncan test to further define the relationships between the independent and dependent variables.

The experimental design using the longitudinal approach of data collection and measurement, combined with the use of a control group, provides a well-designed study. These aspects, along with the measure of performance prior to the introduction of the MBO program, provide valid data for the researcher to analyze. Ivancevich carefully assembled this data and used competent statistical techniques to analyze the data. The conclusions that were formulated by Ivancevich were indeed supported by his analysis of the

data and logically presented in the study.

Ivancevich concedes that although this empirical study produced very conclusive results on the use of MBO, it is not in itself the "definitive" work on the usefulness of MBO. The author says that a full 20 years of rigorous research on MBO need to be done so the costs and benefits of this approach can be validly determined (573).

The study by Tosi, Hunter, Chesser, Tarter and Carroll looks at whether MBO is actually performing as past studies have indicated that it has. The authors suggest that there is a fairly large body of empirical evidence which supports the general notion that MBO has positive effects on the attitudes and performance of managers who function with it. Their study attempts to analyze and replicate this data (Tosi, Hunter, Chesser, Tarter, Carroll 276).

Two longitudinal studies were undertaken to measure the effect of MBO on two separate organizations. A 50-item questionnaire was used as the primary data collection instrument. This questionnaire was developed by Tosi and Carroll. The questionnaire contained prioritized sub-scales assessing goals,

feedback, superior-subordinate characteristics, and end-result variables. The questionnaire was administered at two separate time periods, 18 months apart, at each of the two subject organizations (279).

After the data was collected the questionnaire was cluster-analyzed to develop empirical scales. Scores before and after, as well as change scores were computed for each scale and all were then cross-correlated. The questionnaire was also subjected to cluster analysis. This method de-emphasizes blind rules for forming large clusters of items and reorders interitem correlation matrices so that, when examined, small clusters of similar items can be formed (279).

The study presents some question as to whether the questionnaire extracted pertinent data from the two organizations. The questionnaire was developed three years prior to the present study and does not deal directly with issues that are particular to the subject organizations. The researchers did do a good job of taking the data that was collected and forming valid and useable indices to be evaluated. The cluster analysis that was performed checked the internal consistency of the data. This insured that the

empirical scales that were developed by the clusters measure only one variable. This was checked by examining the intercorrelations among the items in each cluster to detect if any cluster might contain items which would form sub-clusters. This required that all data clusters be within sampling error of a Spearman rank one pattern. In addition, the correlations between the items in a cluster were compared to items outside the cluster to examine the external analysis and validity of the data (279).

This data was then carefully analyzed using several mathematical calculations. The most significant of these is the cross-lag correlation. The correlation is used to test process assumptions. The cross-lag correlation is a procedure that measures the correlation between one dependent variable and two or more independent variables. This can only be done in a longitudinal correlational study. The cross-lag correlation says that two variables (x,y) can be measured at two different points in time. These changes can then be computed at delta $X=(x_2-x_1)$ and delta $Y=(y_2-y_1)$. These change scores can then be correlated to yield R (delta X delta Y). If R (delta X

delta Y) is significant, then a stronger case can be made for a causal or process relationship between x and y than that based on r_{x1y1}. The mathematical implications of this type of analysis provide a strong basis to the validity of the conclusions drawn by the authors (277).

The use of the statistical analysis by the authors was based on sound mathematical models. The authors took great care in designing the analysis to evaluate the data collected. One possible problem in the type of analysis performed was the danger of using static correlations for causal inferences which can cause false positive results. Even the use of more sophisticated methods of dynamic and cross-lag correlational approaches encounter the same problem of drawing causal inferences. In the analysis of the present study no consideration was given to the impact correlation matrix. This consideration could have accounted for some of the tendencies for the data to show a regression to the mean. The authors attempt to explain the appearance of a simple regression to the mean, but it compromises a small part of the integrity of the data (278).

In performing any type of empirical study, there is no one given set of calculations which can give a definitive answer to analyzing data. Methodological considerations must always be made to determine which type of analysis will best suit that particular type of study. One method will present validity problems as opposed to a second method that will solve the first validity consideration, but create a second consideration that must be taken into account. In the present study, the authors selected appropriate methodological considerations in which to analyze their data. They pointed out any variables which may be considered corrupt and explained why they chose to analyze that data in that particular fashion.

The results of the data analysis appear to be valid and mathematically correct. As noted earlier, the collection of the data might have been done differently to have a better "fit" to this particular study, but that would have required practically an entirely different study to validate the new data collection method. The authors instead used a data collection method which is considered valid from past experiments and analysis.

The study by Muczyk was an attempt to account for many of the variables that were left undefined by previous studies. Muczyk states that many earlier studies of hard data on the effect of performance due to MBO contained many faults. Muczyk attempted to account for the Hawthorn effect, and attempted to eliminate the bias that often occurs by using measures that employ self-reported methods of performance evaluation. Muczyk also suggested that a control group was essential in order to be able to draw or infer causation.

The study was conducted in a large multi-branched bank in the Washington D.C. area. A group of thirteen branches was selected to serve as the experimental group (E). This was that group in which MBO was implemented. A second group of thirteen branches that closely matched the original group was selected to serve as the first control group (C_1). Several factors were used to match the two groups such as volume of business, number of managers, age and education of branch managers. Subjects in the (C_1) group knew that they were part of a study. They were asked to complete all the psychological instruments employed in this

study before it was begun and after it was completed. This was done since the knowledge of the study would likely arouse the competitive instincts of the subjects (Muczyk 320).

A second control group (C_2) of 8 branches were deliberately held out of the study. They had no knowledge of their involvement in the study and had no contact with the experimenter. This was done to measure the magnitude of the Hawthorn effect.

Although great care was used in matching and selecting the branches, possible bias could have resulted in the placement of the bank branches into a particular group. Due to the limited number of branches of the bank (41), random selection was ruled out as a possible selection option. Random selection is generally a better statistically correct process, but in this case the experimenter chose the best possible alternative.

Several data collection instruments were used in this study. They included Miner's Verbal Ability Test, French's Test of Insight, and Ghiselli's Self Description Inventory. The instrument measuring satisfaction with the organization, superiors, the

reward system, the subordinates, the industry, and the opportunities for self-development was an instrument that was developed by Tosi and Carroll that was used in earlier studies (Muczyk 322).

Performance measures that were used for this study included: number of checking accounts, number of saving accounts, number of other time deposits, number of installment loans, dollar value of checking accounts, dollar value of savings accounts, dollar value of other time deposits, dollar value of installment loans, dollar value to teller's adjustment accounts, and dollar value of interest on commercial loans (322).

A 't' test for independent samples was used to evaluate the data and to compare the experimental group and the first control group at six and twelve month levels. 'T' tests were also used to test dependent samples that tested performance differences between the experimental and second control group. Change scores were used to control for any initial differences in both tests. In addition, an analysis of covariance was run to account for the differences encountered (Muczyk 324-325).

Although several additional statistical

calculations such as a performance index summing intercorrelated performance criteria could have been used, the author selected basic analytical techniques to compare and evaluate the results to the data obtained. These techniques provided a sound basis of analysis that the author used to draw his conclusions. The conclusions drawn were indeed supported by the numbers that resulted from the author's calculations.

One possible threat to the external validity of the data collected could be changing economic times. No attempt was made to account for changes in the economic climate that could very well have affected both the volume and value of the business done between the time that the MBO program was first installed and the time that performance was measured. This would have been extremely difficult to factor in, but the study makes no mention if any economic considerations did indeed occur during the duration of the study.

One of the strong points of this study was that it attempted to measure hard data in terms of performance results. This data allows for little personal bias to enter into the analysis. The added considerations that were taken into account, such as the control group and

the attempt to account for the Hawthorn effect by using a second control group, all lend themselves well to the ultimate validity of the results of the experiment.

With the above consideration taken into account, the experiment appears to have provided accurate and valid results for the given situation. The format of the experiment was well developed and implemented, but the results should not be generalized to other organizations or even other banks. The experiment does provide a convincing argument for MBO, but must be classified as only one company, and results for other organizations may very well result in different conclusions. It also must be noted that longer periods of time need to be measured in order to make a conclusive analysis of the ultimate effectiveness of the MBO process.

Chapter IV

RESULTS

This chapter will consider the results of the most significant studies that have been performed on the topic of MBO. The actual findings will be presented as shown in the studies.

Tosi and Carroll in their study used an extensive interview in obtaining data from the corporate managers within the studied company. The authors attempted to obtain and interview as wide a segment as possible to avoid any slanted or corrupt data that could occur if only one particular level of management were interviewed. Table 1 shows the distribution of managers at various organizational levels who participated in the interview phase of the study.

Table 1
Distribution of Managers

Vice President	6
Director	12
Middle Management	20
Lower Management	10
TOTAL	**48**

SOURCE: "Managerial Reaction to Management by Objectives." Academy of Management 13 (1968) 418.

The questions and interviews that were conducted resulted in an accumulation of answers that are grouped into general categories to be analyzed. Table 2 shows the advantages that are perceived to have resulted from the MBO system as reported in the interviews.

Table 2

Advantages of Management by Objectives

		N*	%
1.	I know what is expected of me.....	28	58.6
2.	It forces planning and setting target dates.....	20	41.6
3.	If forces boss/subordinate feedback and communication.....	15	31.2
4.	Increases awareness of company goals...	9	18.7
5.	Documented goals relating evaluation to performance.....	8	16.6
6.	Focus on self-improvement.....	7	14.5
7.	I know where I stand.....	6	12.5
8.	Coordinates activities toward company objectives.....	6	12.5
9.	Subtle pressure and motivation to perform better.....	5	10.4
10.	Improves performance if used.....	4	8.3
11.	Only a general help.....	3	6.2
12.	No advantages mentioned.....	5	10.4

N=48

*The total responses are more than 48 since a manager may have noted more than one advantage.

SOURCE: "Managerial Reaction to Management by Objectives." Academy of Management 13 (1968) 420.

The authors also grouped and analyzed negative responses to the MBO system which can be seen in table 3.

Table 3

Problems and Disadvantages Associated with Management by Objectives

		N*	%
1.	Excess formal requirements.....	21	43.7
2.	Not used to full potential.....	10	20.8
3.	Need to consider different goals for different jobs and levels.....	7	14.5
4.	Never get good feedback.....	7	14.5
5.	I was never really involved in the program.....	7	14.5
6.	It is undesirable to commit oneself to goals formally.....	5	10.5
7.	Lack of information about personal characteristics.....	2	4.2
8.	No real problems.....	18	37.5

N=48

*The total responses are more than 48 since a manager may have noted more than one disadvantage.

SOURCE: "Managerial Reaction to Management by Objectives." Academy of Management 13 (1968) 421.

Donald D. White in his study attempted to measure the effects that an MBO program has on a non-profit organization. White used a 41 item questionnaire as a vehicle to gather his data in this study. As a non-profit organization differs in several respects from a traditional commercial enterprise, White attempted to measure several variables that he felt were significant

to the successful implementation of an MBO system into such organizations.

White grouped the responses of the questionnaires into several tables for analysis. Tables one and two deal with the amount of contact that occurred between superiors and subordinates. The effect that the MBO system had in increasing the formal contact between superiors and subordinates was significant. Increased employee satisfaction was suggested by the substantial positive relationship (r=.64. #P<.01) shown between the effect of MBO on formal contacts. The result was that employees reporting increased formal contacts as a result of the system tended to be more satisfied with the results of the MBO system, while those signifying that formal contacts had decreased were less satisfied with respect to the change. The results are shown in tables 4 and 5 (White 292).

Table 4

Effect of MBO on Formal Contact Between Supervisors and Subordinates

Description	Units I	II	III	IV	V	Total	%
1 Greatly Decreased	0	0	0	0	1	1	.9
2	1	1	0	0	2	4	3.6
3 No Change	6	15	13	8	14	56	50.0
4	4	12	10	3	4	33	29.5
5 Greatly Increased	1	7	3	4	3	18	16.1
Total # Responding	12	35	26	15	24	112	100.1
Average Response	3.4	3.7	3.6	3.7	3.3	3.6	--

SOURCE: "Effects of a Management by Objective System in a Public Health Care Facility." Journal of Business Research 2 (1974): 293.

Table 5

Satisfaction with Change in Amount of Formal Contact Between Superiors and Subordinates

Description	Units I	II	III	IV	V	Total	%
1 Greatly Decreased	0	1	0	1	1	3	2.7
2	0	3	3	0	3	9	8.2
3 No Change	4	14	8	7	9	42	38.1
4	3	11	8	2	6	30	27.3
5 Greatly Increased	5	6	6	5	4	26	23.6
Total # Responding	12	35	25	15	23	110	99.9
Average Response	4.1	3.5	3.7	3.7	3.4	3.6	--

SOURCE: "Effects of a Management by Objective System in a Public Health Care Facility." Journal of Business Research 2 (1974): 294.

White also found that the MBO program contributed positively to the work experience and personal satisfaction of most managers. The questionnaire revealed that individual responsibilities were both clarified and increased as a result of the implementation of the MBO system. The questionnaire results showed that the respondents believed this increased responsibility was desirable and attributed to: 1) Increased ego-involvement in work, 2) An

opportunity to apply acquired knowledge and skills, 3) An opportunity to gain experience, and 4) Increased challenges in daily activities (White 295).

Other results that were apparent in addition to increased responsibility was that control over one's own activities on the job was greater then prior to the implementation of the MBO system. Where individuals' responsibilities had increased as a result of MBO, self control over one's activities also was perceived to have increased ($r=.59$, $\#P<.01$). This served to eliminate the conflict that often results when there is an imbalance between responsibility and control as shown in tables 6 and 7.

Table 6

Effects of the MBO System on Change in the Amount of Personal Responsibility

Description	Units I	II	III	IV	V	Total	%
1 Greatly Decreased	0	0	0	0	0	0	0.0
2	1	1	0	1	1	4	3.7
3 No Change	0	6	4	5	11	26	23.9
4	8	17	12	4	11	52	47.7
5 Greatly Increased	3	10	9	4	1	27	24.8
Total # Responding	12	34	25	14	24	109	100.1
Average Response	4.1	4.1	4.2	3.8	3.5	3.9	--

SOURCE: "Effects of a Management by Objective System in a Public Health Care Facility." Journal of Business Research 2 (1974): 296.

Table 7

Amount of Change in Self-Control on the Job as a Result of the MBO System

	Units						
Description	I	II	III	IV	V	Total	%
1 Greatly Decreased	0	0	0	0	0	0	0.0
2	1	3	0	3	2	9	8.5
3 No Change	1	5	5	3	10	24	22.6
4	7	17	13	6	9	52	49.1
5 Greatly Increased	3	7	6	2	3	21	19.8
Total # Responding	12	32	24	14	24	106	100.0
Average Response	4.0	3.9	4.0	3.5	3.5	3.8	--

SOURCE: "Effects of a Management by Objective System in a Public Health Care Facility." Journal of Business Research 2 (1974): 297.

Participation of employees within the decision making circle of the unit were also perceived to have increased as a result of the MBO system. The marked relationship between this condition and satisfaction associated with it ($r=.84$, $\#P<.01$) indicated the perceived importance to managers of feeling involved in decision making and the ability of MBO to fulfill this need. As a direct result, managers felt they had greater influence with supervisors and other members

within the work unit (White 295).

The MBO system according to the results of the questionnaire also greatly improved communications within the work group. The system was reported to have improved communication by causing information to be more specific and factually oriented as displayed in table 8.

Table 8

Degree of Satisfaction or Dissatisfaction with the Amount of Information Received About Operations

	Units						
Description	I	II	III	IV	V	Total	%
1 Greatly Decreased	1	5	0	1	5	12	10.9
2	2	7	2	4	5	20	18.2
3 No Change	2	6	8	2	10	28	25.4
4	5	12	11	6	3	37	33.6
5 Greatly Increased	2	5	5	1	0	13	11.8
Total # Responding	12	35	26	14	23	110	99.9
Average Response	3.4	3.1	3.7	3.1	2.5	3.2	--

SOURCE: "Effects of a Management by Objective System in a Public Health Care Facility." Journal of Business Research 2 (1974): 298.

Results of the questionnaire disclose that attitudes toward the MBO program were favorable for almost all managers. White offers several reasons for the positive attitudes toward the program. The most significant of these reasons according to the data was the relationships of the two variables, "perceived attitude of the supervisor toward the MBO program" (r=.65, #P<.01) and perceived contribution, positive or negative, of MBO to communication (r=.46, #P<.01) (White 299).

John M. Ivancevich in his empirically based longitudinal study of performance in a manufacturing company using MBO, employed a number of mathematical models to obtain his conclusions. In order to properly obtain valid data it was first essential to be comparing two items that are essentially equal. To this end, three plants were chosen from within the Palos Manufacturing Company to serve as areas for data acquisition. Table 9 shows various characteristics of the plants that Ivancevich felt were essential to be as similar as possible. The table shows that at the beginning of the study these plants were quite similar in terms of critical variables like size, span of control, educational level of subjects, location, and

the number of levels of managements (Ivancevich 565).

Table 9

Characteristics of Plants Included in the Study

Characteristics	Plants Exp. #1 (E_1)	Exp. #2 (E_2)	Comparison (C)
# of First-Line Supervisors:			
Production	34	42	30
Marketing	21	25	29
Avg. Span of Control:			
Production	12.6	11.8	12.0
Marketing	14.7	15.9	18.1
Education level of:			
Production	11.9	12.4	11.8
Marketing	13.6	14.7	14.9
Population of City	>1mm	>7.5m	>1mm
Levels of Mgt	4	4	4
Unionized	Yes	Yes	Yes

SOURCE: "Changes in Performance in a Management by Objectives Program." Administrative Science Quarterly 19(4) (1974): 565.

In any field experiment there is no such thing as a totally controlled experiment. This is especially true of a longitudinal type of study. No organization, either internally or externally has a static environment in which to operate, things are constantly changing. For example, in this study, during the

course of the experiment, two supervisors retired, two died, a new conveyor system was introduced in the three plant locations, a new union-management contract was signed, and a new functional area that concentrated on pollution control was instituted at corporate headquarters.

Two independent variables were examined in testing the MBO program. The dependent variables that were measured were eight performance measures in two departments. In order to examine the data of the three plants statistically the data was first compiled into an ANOVA table which is presented in table 10.

Table 10

ANOVA

Performance Indices of Production Departments in Experimental Plants E_1, E_2 and Comparison Plant C at 5 Data Points

Performance Measure	T_b	T_1	T_2	T_3	T_4	F	p
Quantity Base[a]							
E_1	49.8	51.2	58.6	53.2	50.1	1.13	ns
E_2	53.4	55.6	62.4	60.3	68.4	9.81	.01
C	52.4	51.6	52.7	53.4	52.9	.74	ns
Quality Rate[b]							
E_1	7.8	7.8	6.0	6.4	7.7	1.41	ns
E_2	8.2	7.4	7.7	7.2	6.0	7.83	.01
C	7.1	6.9	7.4	7.3	7.0	.61	ns
Grievance Rate[c]							
E_1	36.0	41.0	53.2	58.6	59.1	7.91	.01
E_2	37.4	38.3	43.4	39.5	32.3	5.14	.02
C	42.6	44.8	47.3	45.0	45.9	1.14	ns
Absenteeism[d]							
E_1	.39	.48	.32	.47	.41	1.00	ns
E_2	.41	.38	.42	.49	.33	5.41	.02
C	.39	.42	.41	.45	.40	.48	ns

[a] Higher figure means greater output.

[b] Lower figure means better quality or less defective parts found by quality control.

[c] Lower figure means fewer grievances filed.

[d] Lower figure means less absenteeism.

SOURCE: "Changes in Performance in a Management by Objective Program." Administrative Science Quarterly 19(4) (1974): 569.

Table 11 reveals the data accumulated and arranged to show the results of the Duncan Multiple Range Test.

Table 11

Summary of Duncan's Multiple Range Test for Production Department

Performance Indices	T_b-T_1	T_b-T_2	T_b-T_3	T_b-T_4	T_3-T_4
Quantity Base					
E_1	ns	.05	ns	ns	ns
E_2	ns	.01	.01	.01	.01
C	ns	ns	ns	ns	ns
Quality Rate					
E_1	ns	.05	ns	ns	ns
E_2	.05	ns	ns	.01	ns
C	ns	ns	ns	ns	ns
Grievance Rate					
E_1	.05	.01	.01	.01	ns
E_2	ns	ns	ns	.05	.05
C	.05	.05	ns	ns	ns
Absenteeism					
E_1	.05	.05	.01	ns	ns
E_2	ns	ns	.05	.05	.01
C	ns	ns	ns	ns	ns

SOURCE: "Changes in Performance in a Management by Objective Program." Administrative Science Quarterly 19(4) (1974): 570.

In the study conducted by Tosi, Hunter, Chesser, Tarter, and Carroll, the authors attempted to measure the effects MBO had on organizations over time. Data was collected in two organizations at two time points

to assess the effects of MBO and how various components of MBO were related to each other.

This longitudinal study used cross-lag correlations to measure the effects of MBO over time. The method of data collection was a 50-item questionnaire containing sub-scales. The data collected were cluster analyzed to develop empirical scales. The result of this cluster analysis yielded the results which are shown in table 12 which follows.

Table 12

Comparison between Organizations A and B on Reliabilities of 14 Scales

Preliminary Scale	Internal Reliability		Change Score Reliability	
	Organization A	B[1]	A	B[2]
Use of goal-oriented methods	.95	.87	.90	.74
Satisfaction with supervisor	.90	.91	.88	.85
Clarity of self-improvement goals	.60	.48	.54	.12
Clarity of performance goals	.68	.69	.53	.45
Orientation toward MBO	.80	.86	.50	.59
Concern of supervisor failure	.57	.62	.35	.24
Supportiveness of supervisor	.78	.72	.70	.55
Influence over supervisor	.60	.64	.29	.38
Need for Policy	.48	.59	.31	.09
Performance-reward association	.84	.77	.68	.52
Subordinate's influence over goals	.75	.69	.50	.52
Difficulty of performance goal	.44	.38	.44	.00
Satisfaction with job	.58	.58	.35	.12
Success in attaining goals	.65	.54	.30	.06

[1] Internal reliability for organization B is the averaged standard score coefficient alpha for the 14 scales from samples of 600 managers in the first administration and 548 managers in the second administration.

[2] Calculated using equation 10.25 of NcNemar (1962: 157)

SOURCE: "How Real are Changes Induced by Management by Objectives." Administrative Science Quarterly 21 (1976): 280.

The sub-scales derived from the initial analysis of the data collection instrument were calculated from the above table. The coefficient alpha was calculated

for each sub-scale and ranged from .48 to .95, although some were marginal.

Since the change score reliabilities were of utmost importance in this study it was decided to undertake additional analysis of the questionnaire to improve the levels of reliability. Since reliability is a function of the average interitem correlation and the number of items in a scale, it may be improved by combining sub-scales (Tosi, Hunter, Chesser, Tarter, Carroll 280).

This was not done haphazardly by the authors, since combining items might substantially reduce the average interitem correlation as well as blur important content differences. The conclusion of the further analysis resulted in the outcome presented in table 13.

Table 13

Reliabilities of 7 Scales

Scale	Internal[1] Reliability		Change Score Reliability	
	Organization A	B	A	B
Superior-subordinate relation	.96	.94	.94	.90
Clarity and relevance of goals	.90	.80	.87	.60
Orientation toward MBO	.80	.84	.50	.50
Performance-reward association	.84	.70	.68	.25
Subordinate's influence over goals	.75	.72	.50	.50
Satisfaction with job	.58	.59	.35	.13
Success in attaining goals	.65	.57	.30	.13

[1] Coefficient alpha scale reliabilities.

SOURCE: "How Real are Changes Induced by Management by Objectives." Administrative Science Quarterly 21 (1976): 281.

A third administration of the questionnaire was conducted at organization A 18 months after the second administration in order to validate the previous data. The means and standard deviations for all three measurements on each of the seven scales are presented in table 14.

Table 14

Means and Standard Deviations of the 3 Administrations of the Questionnaire in Organization A

Scale Description	Means			Standard Dev.		
	t_1	t_2	t_3	t_1	t_2	t_3
Superior-subordinate relationship	3.1	3.2	3.2	.36	.35	.38
Clarity & relevance of goals	2.7	2.9	3.0	.61	.48	.47
Orientation toward MBO	3.0	3.3	3.2	.86	.96	1.01
Performance-reward association	3.7	3.7	3.6	.87	.65	.75
Subordinate's influence over goals	2.7	2.9	2.9	1.19	.83	.93
Satisfaction with job	3.1	3.1	3.3	.96	.78	.87
Success in attaining goals	2.7	3.0	3.1	1.28	.85	.69

SOURCE: "How Real are Changes Induced by Management by Objectives." Administrative Science Quarterly 21 (1976): 296.

The above data was further calculated to determine what the impact correlation of the 7 variables were. Each of the three different change scores can be paired with the appropriate initial score to provide an impact correlation. To check for hierarchical order in the midst of the large error, the impact correlations were averaged, and the average impact correlations are shown in table 15.

Table 15

Average Impact Correlations for Managers Responding at t_1, t_2, t_3 in Organization A

Variable Number (Change Score)	1	2	3	4	5	6	7
Variable Number (initial/score)							
1	-49	-20	6	- 1	-17	- 5	-15
2	- 7	-40	13	8	- 3	-27	- 5
3	-16	- 1	-57	-24	- 3	10	- 3
4	-13	1	-22	-59	0	10	5
5	6	6	- 6	11	-66	-23	- 6
6	6	-16	29	18	-13	-79	- 7
7	-16	- 1	- 5	- 1	- 3	2	-68

SOURCE: "How Real are Changes Induced by Management by Objectives." Administrative Science Quarterly 21 (1976): 298.

Jan Muczyk in his study stated that there was considerable literature dealing with the subject of MBO. He contended that most of the work was simply descriptive in nature dealing mostly with how MBO should be implemented, its advantages and disadvantages etc. Muczyk stated that the empirical studies that did exist examines perceptions such as attitude, job satisfaction, and similar dimensions, and ignores the issue of performance. Muczyk thus designed his study to deal with the issue of how MBO affects job performance (Muczyk 318).

Muczyk first used 't' tests for independent

samples to determine if any differences existed between the experimental and first control groups that he had selected. The items that he tested for included intelligence, motivation, personality, and satisfaction scores. The results of these tests are presented in table 16.

Table 16

Prestudy Mean Scores for the Experimental and First Control Groups

	$\bar{X}_e$	(N)	$\bar{X}C_1$	(N)	"t"
Intelligence	28.6	23	28.7	21	.08
Motivation	3.9	22	2.8	20	.41
Personality					
A) Perceived Intelligence	38.9	23	38.4	21	.21
B) Supervisory Ability	25.1	23	27.7	21	1.19
C) Initiative	30.1	23	32.5	21	1.09
D) Self-Assurance	27.3	23	30.1	21	1.52
E) Perceived Occupational Level	38.3	23	38.2	21	.02
F) Sociometric Popularity	16.4	23	14.6	21	2.00
G) Decision Making Approach	19.4	23	23.3	21	2.56
Job Satisfaction	26.0	23	29.3	21	1.74

SOURCE: "A Controlled Field Experiment Measuring the Impact of MBO on Performance Data." Journal of Management Studies 15(3) (1978): 324.

A 't' test was also used for related samples to compare the experimental and the first control groups at the six and twelve month levels. The tests examined

changes in checking accounts, savings accounts, installment loans, commercial loans, other time deposits, and teller's adjusted accounts. The purpose of these change scores was to compare for initial differences between the control and experimental groups. The results of these tests are presented in tables 17 and 18 (Muczyk 324).

Table 17

Mean Change Scores for the Experimental and First Control Groups (N=12 Branches in each Group) At the end of 6 Months

	$\overline{X}_e$	$\overline{XC}_1$	"t"
# Checking Accts.	34.75	48.25	.575
# Savings Accts.	8.33	19.83	.445
# Other Deposits	- 9.25	- 2.41	.840
# Installment loans	- 2.33	0.33	.600
$ Value Checking Accts.	62.1mm	696.2mm	.674
$ Value Savings Accts.	237.2mm	240.7mm	.045
$ Value Other Deposits	976.3mm	267.6mm	.601
$ Value Install. Loans	- 9.1mm	- 4.8mm	.168
$ Value Interest on Commercial Loans	*	*	--
$ Value Teller's Adjustment Acct.	.8mm	.6mm	.937

None of the differences is significant at $P< 0.05$.
* Not available at the six month level.

SOURCE: "A Controlled Field Experiment Measuring the Impact of MBO on Performance Data." Journal of Management Studies 15(3) (1978): 325.

Table 18

Mean Change Scores for the Experimental and First Control Groups (N=12 Branches in each Group) At the end of 12 Months

	$\bar{X}_e$	$\bar{X}C_1$	"t"
# Checking Accts.	45.00	49.91	.088
# Savings Accts.	35.58	22.33	.522
# Other Deposits	-46.91	-26.83	1.320
# Installment loans	1.08	-16.41	1.064
$ Value Checking Accts.	101.8mm	968.4mm	.013
$ Value Savings Accts.	641.0mm	455.5mm	.743
$ Value Other Deposits	-102.0mm	36.9mm	.956
$ Value Install. Loans	27.9mm	9.2mm	1.642
$ Value Interest on Commercial Loans	3.3mm	12.2mm	1.628
$ Value Teller's Adjustment Acct.	-2.8mm	-10.8mm	.726

None of the differences is significant at $P< 0.05$.

SOURCE: "A Controlled Field Experiment Measuring the Impact of MBO on Performance Data." Journal of Management Studies 15(3) (1978): 325.

Muczyk was concerned that the influence of the research project may have either a deleterious or a salubrious effect on the performance of both the experimental and first control groups. This concern was due to the fact that the researcher had considerable contact with the experimental group. There was far less contact with the first control group, but a change effect could have occurred. Consequently, a 't' test for dependent samples was used

to test the performance differences between the experimental and the second control group at the end of twelve months. Change scores were again used to control for any initial differences. The data is presented in table 19.

Table 19

Mean Change Scores for the Experimental and Second Control Groups (N=8 Branches in each Group) At the end of 12 Months

	$\overline{X}_e$	$\overline{XC}_2$	"t"
# Checking Accts.	65.75	31.84	.318
# Savings Accts.	45.37	62.25	.165
# Other Deposits	-52.37	-13.62	2.198
# Installment loans	2.50	1.37	.177
$ Value Checking Accts.	633.5mm	975.9mm	.586
$ Value Savings Accts.	708.5mm	488.7mm	1.763
$ Value Other Deposits	2731.3mm	-1447.8mm	1.402
$ Value Install. Loans	36.5mm	6.7mm	1.309
$ Value Interest on Commercial Loans	3.2mm	79.7mm	1.027
$ Value Teller's Adjustment Acct.	3.5mm	- 2.8mm	2.038

None of the differences is significant at $P < 0.05$.

SOURCE: "A Controlled Field Experiment Measuring the Impact of MBO on Performance Data." Journal of Management Studies 15(3) (1978): 326.

Table 20 reveals how the economic indices were intercorrelated as a result of the analysis of the data collected.

Table 20

Correlation Matrix for the Ten Criterion Variables

Variable Number	1	2	3	4	5	6	7	8	9	10
1	1.000	0.895	0.614	0.886	0.639	0.940	0.561	-0.042	0.522	0.018
2		1.000	0.435	0.750	0.350	0.881	0.337	-0.092	0.194	-0.033
3			1.000	0.750	0.535	0.643	0.979	0.125	0.532	0.190
4				1.000	0.674	0.937	0.733	0.109	0.600	0.030
5					1.000	0.676	0.598	0.307	0.941	0.030
6						1.000	0.604	0.072	0.560	0.014
7							1.000	0.130	0.630	0.213
8								1.000	0.187	-0.001
9									1.000	0.048
10										1.000

Where:

Variable Number:

1. Number of checking accounts.
2. Number of savings accounts.
3. Number of installment loans.
4. Number of other time deposits.
5. Dollar value of checking accounts.
6. Dollar value of savings accounts.
7. Dollar value of installment loans.
8. Dollar value of other time deposits.
9. Interest on commercial loans.
10. Dollar value of teller's adjustment account.

SOURCE: "A Controlled Field Experiment Measuring the Impact of MBO on Performance Data." Journal of Management Studies 15(3) (1978): 326.

MBO's impact on role conflict, role ambiguity, need satisfaction, job involvement, perceived importance of contribution and skills in the determination of pay, and job satisfaction is summarized in table 21. Change scores between pre and

post study administrations were employed to control for initial differences (Muczyk 326).

Table 21

Mean Scores for the Experimental and First Control Groups

	$\bar{X}_e$	(N)	$\bar{X}C_1$	(N)	"t"
Role Conflict	-0.38	18	-4.93	15	1.72
Role Ambiguity Scores	-0.22	18	-0.40	15	.05
Need Satisfaction					
A) Self Actualization	-0.11	18	0.86	15	.94
B) Autonomy	-0.61	18	1.00	15	1.26
C) Esteem	0.22	18	0.80	15	0.55
D) Social	0.05	18	0.93	15	1.39
E) Security	-0.11	18	0.66	15	.28
Job Involvement	0.05	18	-0.33	15	.78
Perceived Importance of Skills/Contributions	-1.00	18	-2.73	15	.77
Job Satisfaction	0.72	18	-0.33	15	.51

SOURCE: "A Controlled Field Experiment Measuring the Impact of MBO on Performance Data." Journal of Management Studies 15(3) (1978): 327.

Chapter V

Summary

This chapter will take a broad base look at the data that have become the basis of this study and put them into perspective.

The research by Tosi and Carroll was one of the earliest studies that dealt with MBO using an empirical type of research. During this period MBO was just coming into its own as far as being a viable management tool. The study found many favorable results indicating that MBO had enriched many aspects of corporate life along with improvements in the management of the business. The study also indicated that MBO had created some problems by its interjection into the management of the business.

The conclusion of this study seems to indicate that MBO offered a sound basis to build upon, but at this stage of development, the MBO process still needed refining to become a polished management tool, at least at the one company that was studied. The overall conclusion of this early study seemed inconclusive in terms of defining the practical application of MBO into

a business environment.

Donald White in his study looked at how a recently installed MBO system was affecting a public institution. Up to this point in time MBO was only considered to be a useful tool in private corporations where there was a specific corporate bottom line mentality.

The results of White's study provided considerable support for the use of MBO in the institution studied. Almost every aspect of the variables that White measured show favorable trends which were attributed to the implementation of the MBO system.

White's study confirmed what earlier studies had determined, that the implementation of an MBO system had generally favorable results in terms of employee attitude toward the MBO system. The overall effect on improving employee satisfaction with the newly implemented MBO system yielded a substantial positive relationship ($r=.64$, $\#P<.01$).

Due to its empirical nature, the results of this study showed that MBO can be a highly productive management tool in the running of a public institution as well as a private company. This study led to the application of MBO into more institutions both public

and private, as the results overwhelmingly pointed toward the development of MBO into a management tool that was adaptable to all types of organizations.

Up to this point there has been considerable evidence of the effectiveness of MBO in promoting a positive attitude among management personnel who were involved with its application. John Ivancevich's study furnished absolute evidence that MBO also provided positive improvements in actual output.

Ivancevich conducted an empirically based longitudinal study of performance in a manufacturing company which used MBO. The study used many mathematical models to measure and compare the effects that the MBO system was having on the productivity of the corporation.

The conclusion of this study provided empirical results that showed how an MBO system can positively affect output within an organization. This study produced data that showed immediate results can be obtained with the proper implementation of MBO into a given situation. The study also revealed that these effects can be long lasting. The biggest increase in production was found to occur between the 12 and 18 month time periods. Ivancevich concludes that

longitudinal studies need to be performed that cover time spans of twenty years or greater in order to fully understand how effective MBO will be ultimately.

Ivancevich in his study showed that the use of MBO can profit a corporation in many aspects. Human relations are one area in which MBO can be of benefit, as has been shown in previous studies, but in addition, this study proved that a bottom line increase in productivity can be achieved.

The study by Tosi, Hunter, Chesser, Tarter and Carroll took a wide angle perspective of previous works done concerning MBO. They realized that there was much supporting data stating that MBO has positively affected of the attitudes and performance of managers who functioned within an MBO system. The authors designed their study to determine whether the positive results that had been recorded in prior experiments were actually the result of the implementation of MBO, or whether other variables caused the favorable results that were being reported.

The study attempted to investigate seven general factors that the authors felt measured the effects that an MBO system had on an organization. Several mathematical models were developed to evaluate the data

collected, as it pertained to the pattern of correlations. The authors concluded that of the seven variables evaluated, five seem to comprise the validity of MBO as the overriding factor which brought about change.

The results of this study point to the fact that several underlying events occur that affect any change in attitude or performance by an individual. It is almost impossible to evaluate any given situation in a vacuum since the external environment is always exerting outside pressures that ultimately affect the final outcome.

Tosi, Hunter, Chesser, Tarter and Carroll by way of this study conclude that MBO can have a positive effect on many organizations as has been documented in previous studies, but they conclude that the simple application of an MBO system may not be the only underlying reason for the positive results that have been previously achieved. The authors state that there may be numerous variables that must be considered before simply stating that MBO can cause such direct and positive results. The authors conclude by saying that future research must be directed at the discovery and analysis of these and other potential general

factors to make an ultimate decision on the effectiveness of MBO.

Jan Muczyk in his study dealt with measuring the results that an MBO system had on productivity of employees. Muczyk stated that much research had been done concerning MBO and how it affected employee attitude, but he questioned what was the end result of an MBO system. Did MBO help improve output, or simply serve as an employee relation tool?

Muczyk's experiment measured several variables at a 41 branch bank. The author controlled the process of measuring the variables very well by using separate control and experimental groups. Data was collected at the start of the experiment, six months after the implementation of the MBO system, and twelve months after the implementation of MBO.

After the data was collected and analyzed the results showed very impressive gains that were perceived to be the result of implementation of the MBO system. All the goals of the experimental group were met or exceeded. The author then went one step further and applied "t" tests to compare the results of the experimental group to the results of the control group.

These "t" tests revealed that although all the

variables of the experimental group showed improvement, these increases were not significant at the .05 level of reliability. Thus, what at first seemed to be impressive results touting the virtues of MBO seem to contradict the original conclusion that MBO created the positive results.

The conclusion drawn from the Muczyk study emphasizes the results of the Tosi, Hunter, Chesser, Tarter and Carroll study which implied that it is very hard to measure the effects of MBO. Muczyk feels that present definitions of MBO are simply too general to adequately test. He also states that due to these facts, the usefulness of MBO has not yet been fully determined, and that the state of very little knowledge about the subject of MBO will continue for many years to come.

The topic of MBO has been widely written about in the past several years. There are literally hundreds of articles by authors who relate their personal experience about the successes as well as the failures of MBO. These authors express their personal experiences ranging from firm supporters, stating that MBO is the ultimate tool in the management of business, to the detractors of MBO who say it needs to be avoided

at all costs if a business is to remain focused and profitable.

Empirical studies dealing with the topic of MBO are also prevalent in the literature of the day. These studies have dealt with several aspects of the MBO process in an attempt to determine if MBO is a viable tool to the business manager or if it is simply a popular fad which many companies have employed due largely to the popularity it has received in recent years. Many corporations both public and private, looking for a quick fix to problems have adopted MBO in hope of finding an easy answer to their internal problems.

Whereas the writings in the business trade articles which deal with personal feelings about MBO seem to be split evenly among supporters and detractors, the same is not the case with empirical studies. The overriding majority of studies that have been performed on the topic of MBO have found generally positive results in the areas being investigated. These empirical studies have dealt with many aspects of how MBO affects corporations from the human aspect of improved communications to measuring the actual effect of physical output due to the use of MBO techniques.

As has been reviewed in the past three chapters, the best empirical studies of the day have provided evidence that MBO has indeed performed well in most situations. Based on the findings of these studies, which are the best available to date, it is logical to accept the hypothesis as stated.

Limitations

Despite the fact that these empirical studies have generally found favorable results in the indices that they are attempting to measure, there is one overriding principle that consistently appears in each of these studies. Each author has stated that what they have researched dealt with only one particular organization at one time period. Most of the authors have concluded that research needs to be conducted over much longer time periods to determine if their conclusions will stand the test of time.

In addition to the time element, there are other considerations which must be taken into account to determine if the application of MBO is a wise investment for a corporation. The study by Muczyk plainly pointed out that empirical studies sometimes present data that is misleading. The complex nature of

MBO makes it very difficult to define, much less to measure.

There have been no empirical studies of MBO to date which have exceeded a time span of more than a few years. This may be due to the fact that an empirical study attempting to measure some variable that is related to MBO is impossible to isolate over a long time period. The internal and external environments in which a business operates make it impossible to precisely measure what effect that MBO has had on a particular variable.

All the studies to date have only dealt with one particular company in evaluating the effect that MBO has had. No studies have attempted to evaluate MBO across a cross-section of companies to evaluate MBO on a wider scale. The logistics of attempting to do such a study would be practically impossible. This type of study would require too many variables to have been manipulated in order to make such a study feasible. Thus, MBO can only be evaluated and measured in one company at a time and the results, for the most part can not be transferred to other companies in a particular industry. The end result is that transferability of research findings cannot be

practically applied from one corporation to another.

Based on ten years of personal experience operating within an MBO system, it is evident that MBO can not be classified into an all exclusive category of being either good or bad. Personal observation has revealed that the same MBO system operating within the same organization can have totally different results depending on the individuals involved in any particular department. One department can have tremendously successful results using the system while the next department flounders in useless paperwork and regulations.

While some departments in this corporation administered the application of the MBO system poorly, the corporation under the direction of the MBO system was tremendously successful in both productivity and profitability, with these results being able to be directly attributed to the MBO system.

What this says is in agreement with what Tosi and Carroll concluded from their research on MBO, namely that MBO provides a sound basis to build upon. Many variables at every level need to be addressed to custom taylor the MBO system to operate efficiently within a given organization.

Suggestions for Future Research

An noted earlier, MBO is an extremely complex issue that involves many separate and distinct elements that come into play in determining exactly what MBO is. Continued study would be helpful in examining certain aspects of the MBO system in detail. Such examination could deal with the effect of MBO on communication within the different levels of the organization, subordinate-superior relations, or changes in productivity. By limiting the area of research to a more specific set of indices, it would become simpler to formulate a workable definition in which to test.

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