THE EFFECTS OF TASK RELEVANT KNOWLEDGE, GOAL LEVEL, GOAL COMMITMENT, AND MOTIVATION ON THE PARTICIPATION-PERFORMANCE LINKAGE: AN EMPIRICAL EXAMINATION

by

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A DISSERTATION

IN

BUSINESS ADMINISTRATION

Submitted to the Graduate Faculty
of Texas Tech University in
Partial Fulfillment of
the Requirements for
the Degree of

DOCTOR OF PHILOSOPHY

Approved

Chairperson of the Committee

Accepted

Dean of the Graduate School

May, 1993

ACKNOWLEDGEMENTS

I wish to gratefully acknowledge the numerous helpful contributions of the committee in general and my chairman, Dr. Don W. Finn, in particular. It is not possible to imagine a better committee with which to work.

In addition, I want to recognize my wife, Adelia, and my daughters, Laura and Natalie, without whose support, encouragement, and faith this would not have been possible.

TABLE OF CONTENTS

ABSTRACT

One of the goals of most organizations is to increase the level of job performance. No single variable or theory has been found that explains performance variability. Maximizing job performance may lead to higher productivity, reduced turnover of employees, and lower overall costs to the firm. The ability to recognize variables that may affect job performance can diminish the unexpected attrition of employees and the associated costs of replacement in addition to minimizing costs resulting from increased productivity.

Empiricists in the psychology, organizational behavior, and accounting disciplines have investigated the efficacy of participative decision making. The findings of those studies have been equivocal due, in part, to the varying effects of organizational, cultural, individual, and interpersonal differences evident in the studies. In particular, this research stream has developed in the accounting literature because of the close association between the budgeting function and the accounting function in developing control systems for purposes of evaluating performance in service, manufacturing, and marketing organizations. The purpose of this study was to investigate the relationship between budgetary participation and job performance. A linking factor not previously investigated

is the extent to which task relevant knowledge influences the performance of the individual. Task relevant knowledge is defined as the body of information at the disposal of the individual that may be used to accomplish the task for which he/she is evaluated. This task relevant knowledge is implemented in the identification and selection of strategies used to accomplish the goals of individuals. It is hypothesized that if a subordinate can acquire useful knowledge about the task or brings that knowledge to the job through previous experience or training, he or she will be better able to perform that task. An interesting question is the nature of the influence that task relevant knowledge has in the associations among participation, goal level, goal commitment, and motivation and their ultimate effects on performance.

An ancillary objective of this study was to validate a measure for task relevant knowledge. In addition, this study replicated portions of prior studies investigating the relationships between moderating and intervening influences in the participatory budgeting process and their subsequent effects on performance. The effects of goal commitment, goal level, motivation, and task relevant knowledge on job performance were examined.

The results of this study support the contention that higher degrees of budgetary participation results in higher goal levels, and goal commitment is related to goal level.

No support was found that motivation is related to goal level. The analysis of the results suggest that task relevant knowledge is a significant predictor of performance. Only weak support was indicated for the moderating influence of goal commitment in the relation between goal level and motivation. The hypothesis that motivation is related to higher levels of job performance was not supported.

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION AND BACKGROUND

> Participation can be broadly defined as an organizational process whereby individuals are involved in, and have influence on, decisions that have direct effects on those individuals. While participation can have many contexts and settings, one in particular has, for the last three decades, been of great interest to researchers in management accounting. This is the area of participation in budgeting that can be more specifically defined as a process in which individuals, whose performance will be evaluated, and possibly rewarded, on the basis of their achievement of budgeted targets, are involved in, and have influence on, the setting of these targets. [Brownell, 1982a, p.124]

One of the goals of most organizations is to increase the level of job performance for the explicit purpose of improving product quality and/or firm efficiency. No single variable or theory has been found that substantially explains performance variability. Maximizing job performance may lead to higher productivity, reduced turnover of employees, and lower overall costs to the firm. For example, in the service sector, certified public accounting firms have experienced turnover rates as high as 45% annually, largely in the entry-level staff accountant area [Bao *et al*. 1986]. Replacement costs for entry-level staff accountants has been estimated at between $10,000 and $15,000 [Bullen and Flamholtz, 1985]. The ability to recognize variables that may affect job performance can diminish the unexpected attrition of desired employees and

the associated costs of replacement, in addition to minimizing costs resulting from increased productivity.

Empiricists in disciplines such as psychology, organizational behavior, and accounting have investigated the efficacy of participative decision making. Specifically, this research stream has developed in the accounting literature because of the close association between the budgeting function and the accounting function in developing control systems for purposes of evaluating performance in service, manufacturing, and marketing organizations. Hopwood [1976, p. 79] summarized the early literature by stating:

> While it appears that an increase in participation in decision making can often improve morale, its effect on productivity is equivocal at the best, increasing it under some circumstances but possibly even decreasing it under other circumstances. The practical problem is in trying to identify which conditional factors determine the wider impact of a particular type of participative management programme.

While participative decision-making processes have been long accepted topics of theoretical and empirical writings in the psychology disciplines, its acceptance by accounting researchers can be traced back to early works of Argyris [1952] and Hopwood [1976]. It was Argyris who first suggested the possible efficacy of participation in the budget-setting process in his study of the behavioral effects of goal-setting in the work environment. Hopwood

set out to incorporate much of the behavioral aspects of accounting. As Carsberg noted in Hopwood [1976, p. xi]:

> . . . books have been written which describe techniques for planning financial activities and controlling their implementation. . . . However, readers who have experience of financial planning and control must have thought that the books generally fail to capture the essential essence of the activities.

Previous accounting writers had addressed largely the "technical mechanical" aspects of the accounting systems without regard for the implications of behavioral considerations and the evident reliance of these systems on those human non-mechanical considerations. Hopwood [1976] recognized the paucity of examinations of the role played by human behavior in the design and implementation of accounting control systems.

Hopwood [1976] explicated specific issues relevant to the budget-setting process in organizational settings and their relationships to the human involvement in the process. He recognized budgeting as a multi-purpose activity. The budgetary process, in contrast to long-range strategic planning, directs the short-term development of financial and wider organizational implications of future activities. The budget structures are intended to aid in the proper allocation of resources of the firm. In this manner, the budget provides a framework within which delegation of authority occurs and influence is distributed throughout the organization.

Perhaps more significantly, the use of budgets as targets may have the most far-reaching implications from a behavioral perspective because they are often used as a way to motivate managers. While there is evidence that budgets may have a positive effect on motivation, evidence also exists suggesting that budgets frequently have an unexpected negative effect. Hopwood [1976] concluded that the effectiveness of the budgetary process and the human element cannot be ignored, by stating:

> If the essential human nature of the process had no implications for the technical procedures, perhaps less would be lost, but this is not the case. Budgeting, and for that matter, all other management accounting procedures can never be viewed in technical isolation. Their effectiveness depends on merging technical and behavioral insights. [p. 69]

Finally, Hopwood [1976] addressed budgeting as it relates to the participation of individuals in the decision-making process. Included in this process is the nature of personality characteristics exhibited by subordinates and superiors and their impact on the effectiveness of participation in decision-making. In addition, Hopwood considered the differing work situations and cultural backgrounds and their effects on participation. The significance of Hopwood's explication of the many factors influencing the efficacy of participation in the budget-setting process resulted in a conditional perspective of the process. The budgeting process is complicated by so many factors that participation appears to be desirable for some

circumstances while not desirable under others. It is the understanding of those factors that he suggested as a suitable area of research. As Hopwood [1976, p. 79] noted on the research into the participation-performance linkage:

> Many researchers . . . have been concerned with the broad overall problem of either proving or disproving the general argument [that participation is associated with improved performance] rather than specifying the conditions for various results.

The purpose of this study was to investigate the linkage between budgetary participation and job performance. This study replicates portions of prior studies investigating the relationships between moderating and intervening influences in the participatory budgeting process and their subsequent effects on performance. The effects of goal commitment, goal level, and motivation on job performance were examined.

A linking factor not previously investigated is the extent to which task relevant knowledge (TRK) influences the performance of the individual. Task relevant knowledge is defined as the body of information at the disposal of the individual that may be used to accomplish the task for which he or she is evaluated. This TRK is implemented in the identification and selection of strategies used to accomplish the goals of individuals. It was hypothesized that if a subordinate can acquire useful knowledge about the task through previous experience or training, he or she will be better able to perform that task. An interesting

question is the nature of the influence that TRK has in the associations among participation, goal level, goal commitment, and motivation and their ultimate effects on performance. The research objectives were to develop a measure of TRK, determine the effects of TRK on the relationship between participation and performance, and examine the relationships among the level of goal difficulty, the individual commitment to that goal, and the subsequent motivation of the individual to accomplish that goal.

The organization of this dissertation is as follows: (1) a literature review is presented in Chapter II; (2) the theoretical model, the research model, the formulation of hypotheses, are presented in Chapter III; (3) the research methods and the findings are presented in Chapter IV; and (4) a summary of the findings, their implications, the limitations, and proposed future research is presented in Chapter V.

CHAPTER II

LITERATURE REVIEW

Presented in this section is a chronology of the literature concerning the impact of budgetary participation on job performance. This chapter is organized as follows: a review of general associations between participation and performance is presented, followed by specific research examining additional factors relating to participation, such as goal level, goal commitment, and motivation relevant to this study.

Budgetary Participation and Performance

Early empirical research examining the impact of participation on job performance resulted in conflicting empirical findings. Research into these influences has been actively pursued for over thirty years. In one of the earliest studies relating to budgetary participation, Stedry [1960], in a laboratory setting, examined the relationships among individual performance, aspiration levels, and the types of goals represented by a budget employed in management practice. Stedry analyzed variability in performance across groupings of budgeting categories ("implicit," "medium," "high," and "low" budget conditions). His results indicated participation in goal-setting and subsequent performance were negatively related.

French, Israel, and As [1960] hypothesized positive relationships between participation and production, management relations, and job satisfaction. Unlike the Stedry [1960] study, no significant association was found between the participation and production linkage; support was found for a positive relationship between participation and morale.

Bass and Leavitt [1963] reported results of three separate laboratory experiments seeking to explain the relationship between varieties of planning activities and performance and attitudes on various tasks. The three experiments used managers and supervisors for subjects under varying conditions under which task strategies were to be pursued and executed. Significant differences in performance were observed for the self-planning groups compared to those with assigned strategies. This study reported strong positive relationships between participation in planning and morale and productivity of the participants of the experiment in the participation condition.

Fleishman [1965], in a case study involving piece-workers of a clothing manufacturer and the effects of participation on resistance to change and productivity, hypothesized that participation would be positively related to performance. Groups of workers were relegated to participatory goal-setting or assigned-goal groups. Those who participated in the planning of the observed task were

fully involved in planning the operating sequence for a new style, the bundling procedures, and the pricing of individual operations. The findings indicated that attitude factors are the significant contributing factor for increased performance levels of employees. Fleishman concluded that the perception of participation was as important in the positive effects on employee attitudes as direct participation.

Stedry and Kay [1966], in an experimental field study involving supervisors and foremen of a manufacturing firm, studied the relationships between participation and two measures of performance: productivity, the percentage of actual cost, and rework, the combined labor and material cost of repairing or replacing product. The subjects of the experiment, nineteen foremen, had participated in goal-setting with their supervisors with regard to the productivity measures. It was hypothesized that goals representing an increase in performance over previous goal levels, if perceived to be attainable, would result in higher performance levels. Findings of the experiment supported the view that "challenging" yet attainable goals did result in higher overall performance.

In contrast, Bryan and Locke [1967] studied the relationship between college students with low motivation versus those with high motivation in a laboratory experiment. The subjects were given tasks and directed to

"do your best" or achieve an assigned specific goal. Each subject was directed to repeat the task and analysis of the findings indicated that those given specific goals were able to perform at the same level as those directed to do their best. This finding suggested that, for those with low motivation, non-participative goals can serve as a mechanism to increase motivation and performance. Conversely, for those subjects that are highly motivated, a negative relationship between participation and performance was demonstrated.

Cherrington and Cherrington [1973] examined the effects of budgetary controls and reward contingencies on performance and satisfaction. The purpose of the study was to better understand the optimal conditions of participation and reinforcement contingencies required to maximize satisfaction and performance. The experiment involved 230 undergraduate business students assigned a task in a laboratory setting. Groups of students were divided into those working toward group-based goals, imposed goals, lenient goals, and pseudo-participation goals. Their findings indicated the relationship between participation in the goal-setting process and subsequent performance of the group members was nonsignificant. Thus, it was concluded that performance differences were attributable to motivational differences created by reinforcement contingencies.

Milani [1975] hypothesized a significant positive relationship between foreman performance and foreman degree of participation in budget-setting in his field study of a large manufacturer of heavy equipment. The Milani study attempted to link intervening relationships of foremen attitudes toward their job and company as intervening factors between participation and performance. In contrast to prior research of participatory budgeting effects on performance, budgetary participation in this study was measured on a continuum rather than a participative versus nonparticipative budget-setting dichotomy. The findings of the study indicated a significant association between participation and performance, although, they carried low explanatory power providing only limited support for the efficacy of participative budget-setting.

Latham and Yukl [1975], in a related study of the participative budgeting environment, empirically investigated participatively set goals versus assigned goals with uneducated woods workers. Results of the study indicated that participatively set goals had a significant positive impact on the performance of the educationally disadvantaged workers. As in prior studies, the level of goal difficulty varied over groups of participants, with higher goals associated with participation in the goal-setting process. Additionally, the analysis of goal difficulty in this study indicated that the observed higher

performance was due in part to the higher goals set under the participation condition. Latham and Yukl concluded that participation enhanced the acceptance of the higher goals and increased motivation to accomplish those goals.

Ivancevich [1976] conducted a field experiment comparing assigned goal, no training, and participative goal groups for differences in performance and satisfaction. In his study, sales personnel for a large retail sales organization were divided into three groups. One group consisted of sales personnel and their district managers who were trained in a participative goal-setting program. Another group of sales personnel and their district managers were trained in an assigned goal-setting program. Finally, a third group was not trained in any goal-setting method. They continued operating as they had in the past. Quantitative performance measures were used to test for differences between groups. The findings of the study indicated that there were no significant differences in performance between the assigned goal group and the participative goal-setting group in the sales setting.

Latham and Yukl [1976] continued the examination of the linkage between participation and performance by assigning groups of typists to two experimental conditions: one where goals were assigned and the other where goals were participatively set by the workers. For those in the assigned goal group, weekly goals were established that were

subjectively deemed difficult to reach yet reasonably attainable. In contrast, the participative goal-setting group met individually with their supervisors weekly to jointly determine the goal levels to attain. Productivity of the workers was measured quantitatively and significantly higher differences were found in the groups that participated in the goal-setting process. Their findings further indicated that there were no significant differences in the level of goals set or the frequency of goal attainment by either group.

In another related study into linking factors between participation and performance, Latham and Saari [1979] examined the significance of a supportive superior relationship in a participative goal-setting environment and its effect on performance. In this laboratory study employing ninety undergraduate students, conditions of assigned goals, participatively set goals, and "do your best" goals were compared across levels of supportive and nonsupportive superiors while goal difficulty was held constant. Planned comparisons indicated that significantly higher performance resulted for those groups participating in the goal-setting process while the performance of the assigned goal and "do your best" groups were not significantly different from each other.

In Dosset, Latham, and Mitchell [1979], a laboratory experiment setting was used to examine the associations

between participatory versus assigned goals, knowledge results, goal acceptance and their effects on performance. When controlling for goal difficulty, the findings indicated no significant difference between performance scores for the participative goal-setting and assigned goal groups. The findings supported a positive relationship between assigned goals and performance and goal attainment for difficult tasks.

Kenis [1979] found significant positive associations between participation and performance in his study examining the effects of budgetary goal characteristics on job-related attitudes, budget-related attitudes, and self-rated performance. In this study of 169 department managers with budget responsibilities in a plant setting, Kenis hypothesized that budgetary participation, budget goal clarity, and budgetary feedback would have a positive effect on budgetary performance, cost efficiency, and job performance. Findings for the relationship between participation and goal clarity performance indicated a significant positive effect on budgetary performance of managers.

Merchant [1981] investigated the differences in corporate size and structure and their influence on managerial behavior and performance. He analyzed factors from nineteen firms in the electronics industry, including the degree of participation in the budget-setting process

and the relative sizes of the firms. In his test of these differences, Merchant dichotomized his sample of firms tested into smaller and larger firms (based on their median size). The findings supported the hypothesis that high levels of participation were more positively related to performance in the larger firms compared to smaller firms.

Two researchers (Hopwood [1972] and Otley [1978]), examining participation effects on various budgetary attitudes found conflicting results. In the Hopwood study, the findings indicated that a budget-constrained leadership style emphasizing budget-related performance was significantly associated with job-related tension. These results suggested that budget-constrained leadership style should negatively impact performance.

In the Otley [1978] replication and extension of the Hopwood study, the relationship between leadership style and performance was examined. Otley hypothesized that job-related tension associated with budget constrained leadership style should result in inferior budget performance, particularly with those aspects of performance yielding long-term benefits. Otley's findings indicated no significant association between budget-constrained leadership style and performance.

In an attempt to reconcile the differences between the Hopwood [1972] and Otley [1978] studies, Brownell [1982a] hypothesized that a direct observable association between

leadership evaluative style (budget-constrained, budget-profit, profit-conscious, and nonaccounting) and performance should not be expected due to the moderating effects of budgetary participation. In the Brownell [1982a] field experiment, forty-eight managers from a manufacturing firm were sampled using a survey questionnaire. With respect to the hypothesized effects on performance, the findings indicated a significant positive association between higher levels of participation and higher levels of performance. These results supported the conclusions suggested by Hopwood. In another related study, Brownell [1983a] tested the hypothesis that management by exception in a budgetary context will have adverse effects on motivation mitigated by the level of participation in the budget-setting process. While the results of the study supported this hypothesis, the eventual effects on performance were only marginally significant with low explanatory power.

Chow [1983] hypothesized that individuals who can select their own job standard tightness/compensation scheme packages will outperform individuals who are assigned the same combination of job-standard tightness and compensation scheme. In this laboratory experiment using eighty-six volunteers from undergraduate business classes, an experimental task was used to simulate an assembly line setting. Groups were assigned to "free to self-select" cells and "not free to self-select" cells for both job

standard tightness and compensation scheme. The performance at the task was measured and differences between the participating subjects and those assigned pay schemes and job standards were compared using analysis of covariance. The findings indicated that those individuals allowed to select their own compensation schemes had significantly higher levels of performance. Thus, it was concluded that self-selection of job standards and compensation scheme can have a significant influence on levels of performance.

In Locke, Frederick, Lee, and Bobko [1984], a laboratory experiment was used to investigate the joint effects of goals, task strategies, and self-efficacy on task performance. Self-efficacy was defined as a respondent's judgment of how well he or she can affect actions necessary to deal with impending conditions. Their findings, in comparing these joint effects on performance across experimental units with assigned versus participatively set goals, indicated that when goals are set by the subjects, self-efficacy had a significant effect on task performance.

In another study, Erez, Earley, and Hulin [1985] examined the participation-performance linkage, which included goal acceptance as an intervening factor. Their experimental design used a two-stage method beginning with a laboratory experiment and concluding with a field experiment. The two-stage procedure was undertaken in an attempt to enhance the generalizability of their findings.

It was hypothesized that differences in performance between participative and assigned conditions would be significant only as goal acceptance varied. Results of the laboratory experiment indicated that as goal acceptance increased, the explanatory power of the goal-setting strategy also increased. In the field stage of the experiment, a group of animal caretakers at a laboratory animal division of a university was asked to determine a task and set the goals for their task. Another group of caretakers was assigned the same task and goals. The findings indicated that those individuals participating in the goal-setting process performed significantly better than the assigned-goal group when individual goal acceptance varied.

Brownell and Hirst [1986], in a further study of the participation-performance linkage, tested the hypothesis that participation effects on performance are contingent on the proper match between high (low) budget emphasis (i.e., heavy reliance on accounting performance measures) and high (low) degrees of participation in the budget-setting process through their positive (adverse) effects on job-related tension. One of the purposes of the study was to confirm the positive association between participation and performance found in the earlier Brownell [1982a] study. This field study used a questionnaire administered to line managers of a manufacturing company. While the hypothesized relationship between properly matched evaluative style and

participation and their effects on job related tension was supported, the principal hypothesis of subsequent positive effects on performance was found to be non-significant. It was suggested that the failure to support the positive association between participation and performance found in the Brownell study may have been due to cross-national differences in the sample or the possibility that intervening factors may have been omitted from the model.

In contrast, Brownell and McInnes [1986] found a significant positive relationship between participation and performance in their study of middle-level managers in three manufacturing firms. The hypothesized relationship examined in this study proposed a positive relationship between participation and motivation resulting in a positive effect on performance. Brownell and McInnes used path analysis to decompose the observed relationship between participation and performance into component parts attributable to the intervening influence of motivation and direct influences between participation and performance. Their results did not, however, support a strong association between participation and motivation.

Campbell and Gingrich [1986] considered the cognitive aspects of participatory goal-setting and their interactive effects on performance. They hypothesized that participation in goal-setting involving more difficult tasks should enhance task strategies and, therefore, performance. The

research was a field study involving forty entry-level computer programmers employed by a large computer service organization. The experimental task involved designing and writing actual computer programs of varying difficulty. As these assignments were given to the subjects, they were randomly assigned by a supervisor to individuals who would discuss the standards of performance in some detail, while others assigned to the task would simply be informed what the expected performance would be. The analysis of the findings indicated that, for those subjects receiving more difficult tasks and participating in goal-setting, the subsequent performance was significantly higher than those programmers subject to the assigned goal conditions.

Chenall and Brownell [1988] examined the associations among participation, performance and satisfaction with role ambiguity as an intervening influence. The study addressed the hypothesis that budgetary participation may potentially increase a subordinate's knowledge of superior expectations regarding a subordinate's role, methods for accomplishing superior expectations and the consequences of role performance. The research hypothesis stated that the simple relationship between budgetary participation and subordinate performance will be explained by an indirect effect whereby participation reduces role ambiguity, which enhances subordinate performance. A survey instrument was administered to thirty-six middle-level managers of a

manufacturing firm who were involved in the budget-setting process. Path analysis was used to decompose the direct, indirect, and spurious effects in the model, and the findings indicated that role ambiguity is an important intervening variable in the association between participation and performance.

The preceding narrative has been a review of the major studies into the effects of participation in the goal-setting process on job or task performance. In all of the studies listed, the researchers were attempting to confirm or refute a hypothesized significant positive effect of subordinate participation in the goal-setting process and subsequent performance of the subordinate. Some of the studies were related to prior research into intervening and moderating factors affecting the linkages between participation and performance, but the literature review, in this section, recounts only the chronology of the studies as well as the significant results, if any, reported for the effects of participation on performance. Generally, the findings of the studies fall into three broad categories: findings that confirmed: (1) a significant positive relationship between participation and performance; (2) an non-significant relationship; and (3) a significant negative relationship. Table 2.1 lists the research reviewed and the findings of each. It is clear from those studies dating back to 1960 that the relationship between participation and

Table 2.1 Results of Empirical Studies of the Participation-Performance Linkages.

Results	Studies
Positive Relationship	Bass and Leavitt [1963] Stedry and Kay [1966] Latham and Yukl [1975] Latham and Yukl [1976] Merchant [1981] Brownell [1982a] Rockness [1977] Latham and Saari [1979] Kenis [1979] Locke, *et al.* [1984] Erez, *et al.* [1985] Brownell and McInnes [1986] Campbell and Gingrich [1986] Chenall and Brownell [1988]
Non-significant Relationship	French, *et al.* [1960] Fleishman [1965] Cherrington and Cherrington [1973] Milani [1975] Ivancevich [1976] Dossett, *et al.* [1979] Kenis [1979] Brownell [1983] Brownell and Hirst [1986]
Negative Relationship	Stedry [1960] Bryan and Locke [1967]

performance is not a simple, direct association. It is further evident from the results of these studies that the positive effect on performance may also be influenced by factors that intervene or moderate the structural linkages between participation and performance.

In the next section, other factors included in the literature are presented to complete the review of the research into the structural linkages between participation and performance. Specifically, studies examining the effect of budgetary participation and motivation, goal commitment, and goal level will be reviewed.

Budgetary Participation and Related Factors

Earlier studies into the linkages between participation and performance have resulted in equivocal results as recounted in the previous section. As a result, many accounting writers have suggested that research should be directed toward identifying other factors that influence the participation-performance linkage (Vroom [1960], Hopwood [1976, 1982b]). For example, many of the later behavioral studies examining the linkages between participation and performance have addressed the effects of intervening and moderating factors that were posited to have a significant impact on performance.

Budgetary Participation and Motivation

In this budgetary participation and motivation section, the empirical research addressing the intervening effects of motivation on the participation-performance linkage will be reviewed. In one of the earliest studies into the effects of participation on motivation, Vroom [1960] hypothesized that the more an individual participates in decision-making processes in his or her job, the more positive will be his or her attitude toward that job. Further, Vroom suggested that participation in decision making would affect the individual's motivation to the extent it changes the amount of satisfaction that one expects as a result of performance. In a field study, data from survey questions and company records were elicited for line supervisors employed by a large service organization. His findings provided significant support for the general proposition that participation influences the level of motivation of the subordinates.

In a field study, Searfoss and Monczka [1973] tested the hypothesis that perceived participation in the budgeting process and motivation to achieve the budget are positively related. The setting for the research was five manufacturing divisions of five different industrial organizations. Survey questionnaires were administered to twenty-three plant superintendents, seventy-five general foremen, and 267 foremen measuring perceptions of their

extent of participation in the budget-setting process and their motivation to accomplish those budgeted goals as operationalized by their goal-directing effort. The findings indicated a significant positive relationship between participation and motivation, leading to the conclusion that greater involvement in the decision-making and goal-setting process results in higher levels of motivation.

In another related study, Kenis [1979] hypothesized a positive relationship between participation and budgetary motivation. In this study examining the effects of budgetary goal characteristics on job-related attitudes and self-rated performance, department managers with budget responsibilities in a plant setting were surveyed to determine budgetary goal characteristics. Findings of the study indicated a strong influence on budgetary motivation.

In the Merchant [1981] study of the influences of corporate budgeting systems on managerial performance and behavior, an instrument using a three-item Hackman and Porter [1968] scale was administered to respondents from nineteen electronics firms, measuring the extent to which budgets influenced the respondents' intrinsic motivation. The hypothesis was proposed that administrative use of budgeting and motivation are positively related. Results of the study indicated that in instances where managers participate more highly in the budget-setting process, their

attitudes toward budgeting and intrinsic motivation were higher.

In contrast, Brownell and McInnes [1986] hypothesized that there was a significant mediating effect for motivation between participation and performance. In this field study, which elicited responses from subjects working for three manufacturing firms, a measure of observed variability in motivation was taken that was attributable to differing levels of performance. Their results did not support the hypothesized significant relationship between participation and motivation, although significant positive results were supported between participation and performance.

Budgetary Participation and Goal Commitment

Goal commitment subsumes determination on the part of an individual in accomplishing a goal whether that goal is assigned to him or her or arrived at participatively. Goal acceptance implies that an individual agrees to commit to an assigned goal. Many studies have used the two terms interchangeably, frequently positing a positive relationship between participation and goal commitment.

In an early study, French, Kay, and Meyer [1966] hypothesized a positive relationship between participation and goal acceptance. The field study involved ninety volunteer managers out of a total 122 managers of one department of a nationwide firm. The experiment manipulated

the degree of participation by the subject in setting the goals for improvement in performance and in planning the means for improving that performance. Changes in the attitudes of the subjects were measured in order to determine the degree of goal acceptance on the part of the managers. Their findings indicated that the acceptance of the job goals were higher for those subjects accustomed to a high level of participation. Additionally, they concluded that employees with a high need for independence had greater goal acceptance when participation in goal setting was increased than when participation was reduced or not changed.

In another related study, Latham, Mitchell, and Dossett [1978] examined the relationship between participation and anticipated rewards and their influences on goal difficulty and goal acceptance. In this laboratory experiment, two conditions of participation versus assigned goals were applied to the subjects of the study. The subjects were seventy-six engineers or scientists and their thirty-eight managers. After the designation of the goal condition, the managers were randomly assigned to three incentive conditions (private recognition, public recognition, and monetary bonus). Those engineer/scientist-manager subjects in the participative goal-setting condition mutually agreed upon quantitative scores by which to measure performance. In the nonparticipative groups, the goals were assigned to the

subjects. None of the experimental differences used in the test resulted in significant differences in self-reported measures of goal acceptance. Similar results were found in Dossett *et al*. [1979].

Latham and Saari [1979] examined the association between assigned versus participatory goals holding difficulty of the goal constant. In this laboratory experiment, college students were required to accomplish a brainstorming task. The hypothesis being tested proposed that significant differences would be found in goal acceptance for the participative goal-setting condition compared to the assigned goal condition. Analysis of the results indicated that no significant differences in goal acceptance were indicated.

In a two-step experiment by Erez, Earley, and Hulin [1985], the hypothesis that performance was positively affected by participation through its relationship with goal acceptance was tested in a laboratory setting using university psychology students. A survey instrument was administered to the subjects measuring their degree of goal acceptance. The subjects were randomly assigned to experimental conditions (assigned, delegative, and participative goal-setting conditions). A step-wise hierarchical regression model was used to test goal-setting effects on goal acceptance. Findings indicated that

significant positive associations between the participation condition and goal acceptance were evident.

In another related study, Erez and Arad [1986] examined the effects of participation on goal acceptance by manipulating levels of participation in a laboratory experiment. Ninety-six white collar employees attending a technical school were randomly assigned to the participation conditions and directed to accomplish a personnel selection task. Analysis of variance was used to determine the significance of differences in goal commitment for each group. The findings indicated that for higher levels of participation, significantly higher levels of goal acceptance were evident.

Goal Level and Goal Commitment

Research examining the linkages between participation and performance has tested the effects of goal-level conditions. The difficulty of the budgeted objective is hypothesized to affect the effort level of the individual and, therefore, to influence the subsequent performance of that individual. The motivational influences of various factors have frequently been operationalized in terms of the effort of individuals.

Stedry and Kay [1966] studied the influences of goal difficulty on performance. They believed that for each measurable performance area, a goal corresponding to an

increase in performance relative to prior performance levels, if the subordinate perceives the probability of attainment of the goal is "sufficiently high," will result in higher performance compared to a goal reflecting little or no change. Stated differently, a goal perceived as too difficult will have a depressing influence on the motivation of the individual because of the unlikely attainment of that goal irrespective of any level of effort. In this field study, nineteen foremen in a department of a manufacturing firm were divided into four groups. Two dimensions of performance were examined which consisted of measures of productivity and rework. The manipulation consisted of five levels of difficulty (normal, difficult, easy, challenging, and impossible) for the two performance conditions. In this experiment, the level of goal difficulty was assigned to the subjects. While their findings did not support the research hypothesis, for the difficult goal condition, extremes (high and low levels) of performance were observed, suggesting that beyond a threshold goal level, the effort of the individual was reduced.

An expectancy theory framework was used by Rockness [1977] to investigate the effects of multiple-goal levels, reward structures, and performance feedback on outcomes (performance and satisfaction). Ninety-six subjects drawn from undergraduate business classes were used in this laboratory experiment. The experimental task assigned to

the subjects simulated the verification of the location of integrated circuits on the circuit boards of small computers. The dependent variable, performance, was measured as the difference between the number of correct decoded combinations of circuits and incorrect decoded combinations. Assigned budget level ("high" versus "medium") conditions were used to group the subjects. The budgetary model developed by Rockness predicted that subjects would perform at a higher level in the "high" budget condition, and the findings supported this hypothesis.

Kenis [1979], in his study of the effects of budgetary goal characteristics on managerial attitudes toward the budget, hypothesized that budgetary participation will lead to better attitude toward the budget, higher motivation, and higher levels of job involvement. In this field study involving nineteen plants from sixteen manufacturing firms, a nonrandom sample of middle-level managers involved in the budgetary goal-setting process were solicited for measures of their perceptions on various dimensions of attitude, participation, and performance. Regression analysis of the data indicated that budgetary participation and goal clarity were significant and positively related to attitude toward the budget. Additionally, goal characteristics explained twenty-five percent of the observed variability in the budgetary motivation of the managers. The association

between budgeted objectives perceived as "too tight" and motivation was significantly negative. Thus, it was concluded that participation in the goal-setting process has a significant positive influence in managers' attitudes toward the budget and their motivation to accomplish those budgeted objectives.

In a laboratory experiment by Erez and Zidon [1984], the influence of goal acceptance on the association between goal difficulty and performance was examined. Erez and Zidon hypothesized that acceptance of a goal moderates the relationship of goal difficulty to task performance. Specifically, the hypothesis states that the relationship is positive and linear for accepted goals and negative and linear for rejected goals. The findings supported their hypothesized relationships suggesting that, up to a threshold level, goal commitment is positively related to participation, after which the association reverses.

The preceding review has recounted studies addressing the associations between and among goal level, goal commitment, and motivation and their respective influence on the participation-performance linkages. The research findings frequently support the general proposition that participation in the goal-setting process positively affects performance through its effects on the motivation of the individual. There are additional findings that support a relationship between goal levels and motivation of the

individual as moderated by that individual's commitment to the goal levels established in the participation process. In the next chapter, the theoretical development of the model incorporating the factors reviewed will be discussed, research hypotheses will be offered, and the general research program will be presented.

CHAPTER III

THEORETICAL MODEL, RESEARCH MODEL, AND FORMULATION OF HYPOTHESES

The Theoretical Model

Researchers have examined the nature of the relationship between budgetary participation and job performance and the findings of these studies have resulted in conflicting empirical results, as suggested in the literature review in Chapter II. The empirical research into the budgetary participation and job performance relationship has been based on two competing work-motivation theories: expectancy theory and goal theory.

Within the expectancy theory framework, a subordinate will choose effort levels from several possible levels of effort based on expected outcomes associated with those levels, the outcome valences, and the likelihood those outcomes will materialize [Lawler, 1973]. An empirical study by Klein [1991], using self-reported measures of goal commitment, found significant relationships among goal commitment, goal choice and performance and several operationalizations of expectancy theory constructs. Previous studies using the expectancy theory approach had not examined the goal commitment relationships.

Meyer *et al.* [1988] hypothesized that normative information influences performance expectancy and

performance valence and, subsequently, personal goals and performance. The results of the laboratory experiment using sixty undergraduate students participating in a three-stage experiment supported the cognitive model. In addition, the normative information attenuated the influences of goal difficulty.

Not included in the expectancy theory approach is the goal commitment construct that is a part of goal theory (Becker and Green [1962]; Locke [1968]; Hofstede [1968]). Locke believed that "the most direct effect of participation is probably to commit the subject to the decision reached" [p. 185]. Becker and Green argued that in the case of successful participation, goals are accepted as those of the individual. Hofstede posited that "internalization of goals" influences the association between participation and motivation.

Hollenbeck *et al*. [1989] employed a laboratory setting using 190 college students to test a hypothesized association between the antecedents of goal commitment and difficult goals based on goal theory. The antecedent conditions examined included personal variables (need for achievement and locus of control) and situational variables (goal publicness and goal origin). Significant findings included higher commitment to difficult goals when goals are made public for those individuals identified as "internals"

and with high need for achievement in the self-set goals condition.

Task relevant knowledge, not heretofore empirically examined, is treated as a component of motivation in the expectancy theory approach. In this framework, it would be posited that task relevant knowledge (TRK) would affect the expectancy of the individual that effort would lead to task achievement. An alternative treatment of TRK and goal commitment from a goal theory perspective will be discussed in the next section.

Task Relevant Knowledge

Task and solution strategies used by subordinates in the successful accomplishment of their budgeted objectives define the TRK of the individual. While the motivational effects of participation have been the core of much of the research into the participation-performance linkage, Latham and Saari [1979] and Murray [1990] posited that participation may also affect cognitive factors. While the variability observed in performance of subjects of empirical research into the participation-performance linkage is attributable to attitudinal factors previously described, a portion of this variability might be attributable to differing levels of knowledge that the subordinate brings to bear on the task.

One effect of a participatory decision-making process is suggested by Lawler [1973], where he described the possible benefit that can be derived from communication by the subordinate with the superior. He suggested that the participation process may provide opportunities to the subordinate to make inquiries of his or her superior as to proper task and solution strategies. In this manner, the subordinate may increase their TRK and improve their performance.

Differing levels of TRK may be brought to the job when the individual is first employed by the firm, through previous experience at similar jobs or relevant education. In addition, the individual may acquire incremental TRK through the formal training programs provided by the firm to enhance the skills of their employees.

In the interactions between superior and subordinate in the budget-setting process, information can be transferred from the subordinate to the superior as well. This may result in better task solution strategies developed by the superior. This strategy may be transferred to the subordinate enhancing his or her performance. An alternative interpretation of this subordinate-superior interaction is the setting of more realistic budget goals because the superior has better local information; improved performance measures may result [Murray, 1990].

Differing levels of TRK should result in differing levels of performance. What is less clear is the nature of the relationship of TRK in the participation-performance linkage. Hirst [1987] proposed that strategy identification and selection served as intervening factors in the goal-setting and motivation association. Locke *et al.* [1981] suggested that cognitive factors indirectly affect the association between participation and performance. One possible explanation for the influence of TRK is that it is a necessary condition for a positive motivational influence on job performance. In other words, higher performance levels will be associated with higher levels of motivation when TRK results in the proper identification and selection of task strategies (Murray [1990], p. 111).

Goal Theory

Goal theory posits that a subordinate's behavior is in part determined by his or her conscious intentions and desires [Locke, 1968]. No one theory has fully explained the relationship between participation and performance--possibly due to the large number of variables that may moderate the association. Much of the recent research into behavioral factors affecting job performance is based on the relationships between participation of individuals and the conscious ideas and intentions of individuals. Locke [1968] suggested that behavioral

intentions regulate choice behavior. Also, based on Locke's goal theory, intentions and goals mediate the effects of incentives on job performance. Findings of empirical research have indicated that incentives and feedback do not affect performance independently of the performer's intentions and goals. Locke suggested that this dependent relationship in the participation-performance linkage should be evident for other incentives including competition and participation.

In the participative budgeting environment, the goal theory approach contends that participation alone cannot explain the directional association with performance and has led to research into effects of other relevant factors intervening and/or moderating the effects of participation. There are requisite participation effects on the subordinates' intentions, incentives, and motivations that determine the ultimate effect on performance. To the extent participation influences these intermediate factors, researchers can examine the linkages between participation and performance.

The significant interpretation of goal theory, in this study's context, is the connecting factors between participation in the budget-setting process and their ultimate motivational effects. Implications of the goal theory framework indicate a positive participation-performance linkage to the extent that participation

mediates the intentions and motives of the effected individual. In other words, the fact that an individual participates in the goal-setting process by itself will not necessarily lead to a demonstrated increase in performance. The requisite mechanism to achieve a higher level of performance must include a positive effect on the motivations of the individual because the primary benefits of participation appear to arise through its influence on the individual's motivations.

Locke *et al*. [1981] suggested several variables that potentially affect the participation-performance link. These factors include the extent to which goal level and its concomitant effect on goal commitment subsequently affect motivation of the subordinate. It has been suggested that goal-setting influences the amount and duration of the effort expended. Motivation has often been measured in terms of effort [Mitchell, 1974; 1982].

Logically, higher goal levels, should they be attained, require more effort to be accomplished. As a consequence, in the case a subordinate is commited to the goal at any level, more difficult goals (up to a certain level) should result in more effort from the individual. To the extent more effort and/or extension of effort results from the budgetary process, the eventual influence on performance should be positive. In summary, a positive relation between goal difficulty and motivation is contingent upon the depth

of commitment of the individual to that goal level (see Locke *et al.* [1981] and Hollenbeck and Klein [1987]). In case the individual is uncommitted to the goal level, he or she will not attempt to exert the requisite effort to accomplish the objective. Conversely, if the individual is committed to the stated goal, as the goal level increases in difficulty, the effort induced from the individual increases accordingly. Consequently, goal commitment exhibits a moderating influence between goal level and motivation. Goal difficulty can influence the individual's motivation in another way. If the level of goal difficulty is such that the subordinate perceives it to be unattainable at any reasonable effort level, then the individual will not attempt to accomplish those objectives [Stedry and Kay, 1966]. In this instance, the effect of goal level on motivation is negative. Therefore, goal commitment has characteristics of an intervening and moderating variable.

Several of the variables consistent with goal theory are connected to the effects of participative budgeting. Goal theory suggests that participation can result in greater goal commitment [Locke, 1968]. This "internalization of goals" is also theorized by Hofstede [1968]. Goal level, an important element of goal theory, may also be influenced by participation. There are indications that, in the budgetary slack case, goal levels may be depressed when rewards are contingent on the budget

level (Chow [1983] and Chow *et al.* [1988]). The theory of social comparison proposes that the opposite effect may occur for those individuals attempting to portray themselves in a more favorable way [Festinger, 1954]. This view is shared by Locke and Schweiger [1979] and Locke *et al.* [1981]. Participation and its indirect effects on the motivation of the individual as identified by Locke *et al.* [1981] are illustrated in Figure 3.1.

Cognitive factors have also been theorized to affect this linkage [Latham and Saari, 1979]. To the extent participation in the budget-setting process may increase the subordinate's knowledge of the task, the eventual performance at those tasks may be enhanced through the acquisition of task relevant knowledge [Lawler, 1973]. Task and solution strategies may be selected from task relevant knowledge acquired from many sources. In addition to the acquisition of TRK during the budget-setting process, the level of experience on the job should increase the level of TRK, as well as the experience brought to the job.

Locke *et al.* [1981] suggested the effects of cognitive factors on performance are indirect, while effects of motivational factors are direct. Hirst [1987] suggested that the cognitive operation of strategy development and strategy selection should have an intervening influence between participation and motivation. Alternative interpretation of the effects of TRK was offered in Murray

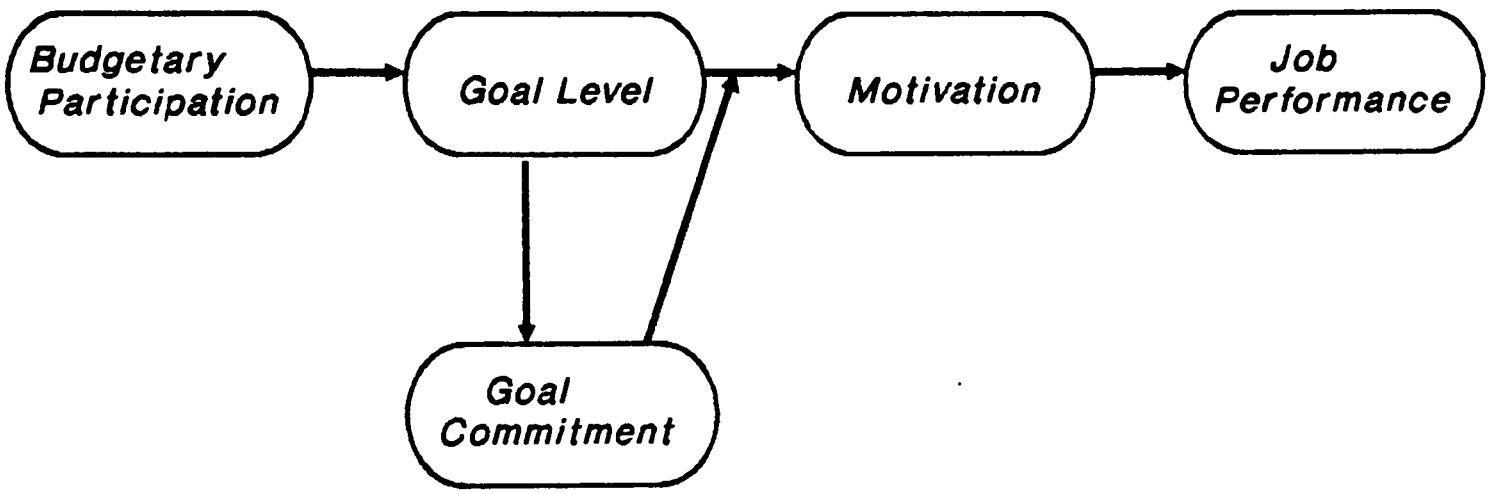

Figure 3.1 Proposed Influences of Goal-Setting on Performance

[1990], where he suggested that TRK and motivation would have an interactive effect on performance. Murray argued that "TRK is a necessary condition for motivation to positively affect performance. That is, working harder will result in improved performance only if those activities that can lead to goal accomplishment have been identified and chosen" (p. 111).

The preceding review of the theoretical underpinnings of the model, in summary, suggests that budgetary participation is positively related to the level of goal difficulty, and that goal level is positively related to the individual's motivation to accomplish that goal. The goal level is also positively related to the commitment of the individual to attain that goal thus positively influencing his or her motivation. This is true until the goal becomes so difficult that the subordinate perceives the successful accomplishment of the goal is unlikely, at which point the individual's lack of commitment depresses the motivation of the individual.

The individual is motivated to accomplish his or her objective and will expend the requisite effort to accomplish the goals, then the influence on motivation and job performance will be positive. The association between motivation and performance, however, will also be influenced by the task relevant knowledge of the individual. This is the case because it is not only necessary to be motivated to

accomplish the objective, but the individual must be able to identify and select the proper task solution strategies to meet those objectives. The theoretical model depicting these associations is presented in Figure 3.2. One of the purposes of this study is to provide evidence to support or refute the model proposed in Murray [1990].

Summary of Research Supporting the Variable Constructs

Researchers have specified the structural linkages between participative budgeting and job performance as discussed in the previoous chapter. Studies of budgetary attitudes examining participation and goal level, goal commitment, and motivation and their effects on performance have increased the body of knowledge relating to the participative decision process. Significant contributions in the area of managerial accounting theory have resulted from this research stream.

Budgetary Participation

Argyris [1952] presented anecdotal evidence that employee involvement in the budget-setting process may have a beneficial influence on employee performance. Research studies have subsequently examined the cultural, organizational, interpersonal, and individual states that enhance attitudes related to increased performance and whether these attitudes positively affect performance.

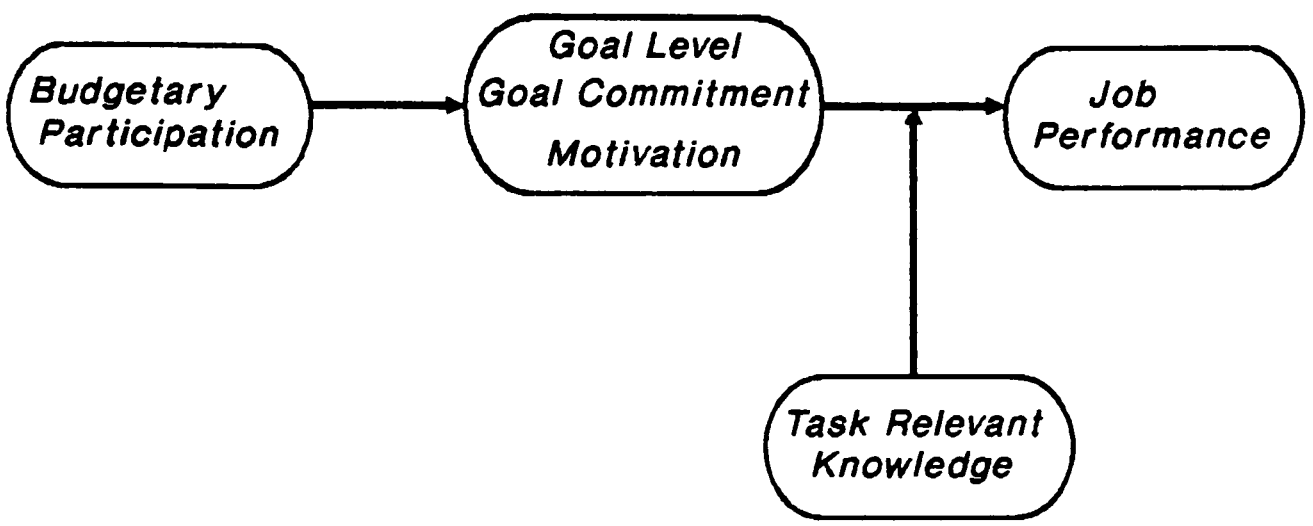

Figure 3.2 Theoretical Model of the Participation-Performance Linkages

Studies testing the hypothesized positive relationship between participation and attitude have confirmed this relationship (Milani [1975], Latham and Yukl [1975], and Kenis [1979]); the hypothesized positive relationship between participation and performance has not been unequivocally supported by empirical studies, as presented in Chapter II.

Motivation

Lawler [1973] theorized that participation should positively affect performance through the effect of participation on a subordinate's motivation to accomplish the goals set during the participation process as suggested by Locke [1968]. The organizational behavior and management accounting literatures support this view (Hofstede [1968]; Ronen and Livingstone [1975]; and Brownell and McInnes [1986]).

Empirical support for the association between participation and motivation was presented by Kenis [1979] and Merchant [1981]. Kenis elicited survey responses from 298 managers responsible for the budget-setting functions who were employed by nineteen manufacturing firms. Kenis tested the effects of budgetary goal characteristics of participation, clarity, feedback, evaluation, and difficulty on attitudes toward job satisfaction, job involvement, job tension, budgets, and budgetary motivation, budgetary

performance, cost efficiency and job performance. With regard to this study, the Kenis findings support the positive relationship between participation and the motivation of the subordinate.

In a related study, Merchant [1981] examined the associations between budgeting systems and corporate size, diversity, and degree of decentralization. In a study of nineteen electronics firms, Merchant examined the choice of budgeting systems and their influence on organizational performance and manager motivation and attitude. Once again, in specific situational contexts, the associations between participation in the budget-setting process and managers' motivation were positively related.

Brownell and McInnes [1986], following the expectancy theory framework, empirically examined the intervening role of motivation in the participation-performance linkage. While they found that motivation and participation were each positively related to performance, they found that participation was unrelated to motivation. In their study, the measure for motivation was associated with intrinsic and extrinsic outcomes of motivation weighted by their expectancies. As a result, motivational elements were captured that vary with performance rather than participation.

Goal Level and Goal Commitment

Hollenbeck and Klein [1987] theorized that a positive relation between goal level and motivation is moderated by the level of goal commitment. In commenting on previous field studies of these effects, Locke *et al.* [1981, p. 129] stated that "the majority of the correlational studies found only a conditional positive relation between goal difficulty and performance and/or effort." Based on Locke's goal theory approach, the effects of participation on effort (motivation) would be positive in the case the individual is committed to the goal.

Stedry and Kay [1966] proposed that a goal set beyond a certain level was counterproductive because of a depressing effect on subordinate motivation. In other words, at a threshold level of difficulty, the subordinate would decide that any level of effort would not likely result in successful accomplishment of the objective.

Kenis [1979] empirically examined the level of goal difficulty and its effect on motivation. The research results indicated that budgets that were perceived as "tight" resulted in higher motivation for the subordinate when compared to those budgets that they perceived as "too tight."

In a related study, Erez and Zidon [1984] empirically examined the association between goal difficulty and performance in a laboratory experiment using 140 technicians

and engineers attending a technical training course. Their results indicated that goal level is positively related to performance until a threshold level of goal difficulty is reached, beyond which the relation became negative. Stated differently, at low initial levels of goal difficulty, increases in goal level lead to increases in motivation by increasing the level of goal commitment. Conversely, at higher goal levels that are perceived to be unattainable, subsequent increases in goal difficulty lead to decreases in motivation resulting in a depressing effect on motivation. Implications of the empirical findings of the effects of goal level and goal commitment suggest that, for the association to positively influence the motivation of the individual, there must be a requisite "goal fit." That is to say, as the level of difficulty increases, the level of commitment to that goal increases until a threshold is reached where the individual becomes discouraged. While the individual is not discouraged, there exists a goal fit. In a laboratory experiment involving undergraduate business students, Chow [1983] found that self-selected compensation schemes and job standards may significantly affect motivation. The experiment was not intended to be generalized to the manufacturing environment. However, it provided further support for the notion that participation in the goal setting process may positively influence the

motivational attitudes of those participating in the goal-setting process.

Job Performance

Studies of the relationships between participation and performance have examined the influences of various factors, such as individual, interpersonal, cultural, and organizational variables, and their effects on performance. A brief review of measures of performance used in selected studies will be discussed.

Merchant [1981] examined the effects of the selection of corporate budget system on manager performance by using a self-rating measure of overall performance. He developed a subjective measure to match objective data in a cross-organizational setting. Merchant employed self-rating due to evidence [Heneman, 1974] that self-ratings are more accurate and precise than superior's ratings, possibly because a superior may be subject to a halo effect and/or may be less well-informed as to an individual's performance.

Kenis [1979] investigated the effects of budgetary goal characteristics on managerial attitudes and performance. He utilized a self-reported budgetary performance measure based on a seven-point scale. In addition, the respondents rated the cost efficiencies of their respective departments and their overall performance on a five-point scale.

In Milani [1975], a field study examined the relationship of participation and supervisor performance and attitudes. Performance was measured based on proprietary data provided by the firm. The measures included two ratings of performance: performance percentage and an hours to base ratio. The chief financial officer of the firm perceived these measures as indicative of the departmental performance and the departmental contribution to the overall objectives.

Chow [1983] investigated the effects of compensation scheme and job standard tightness on performance in a laboratory experiment using eighty-six volunteer undergraduate business students. The organization of the experiment and the task were based on a design that simulated an assembly-line environment (Rockness [1977]). Subjects were assigned to "free to self-select" cells and "not free to self-select" cells for job standard conditions (tight versus average standards). The performance of the subjects at the task was measured and differences between those performing under the tight job standard condition was compared to those under the average condition. Analysis of those differences was accomplished using analysis of covariance techniques (pretest skill level was used as a covariate to control for differences in performance attributable to differing levels of skill in the subjects). The findings indicated that those individuals with assigned

job standard and compensation scheme packages had significant independent effects on performance.

The Research Model

The research model used in this study is adapted from previous research, which investigated the relationships of goal level, goal commitment, and motivation as well as the extension of goal theory to include the task relevant knowledge construct. The research model is illustrated in Figure 3.3. The primary and secondary relationships implicit in this model will be discussed subsequently.

Formulation of Hypotheses

The research objectives are to: (1) develop a measure for TRK; (2) determine the effects of task relevant knowledge, goal commitment, goal level, and motivation on the link between participative budgeting and performance; and (3) measure the relationship between motivation and performance as it is affected by TRK.

The research hypotheses, in the alternate form, are:

H_{a1}: Higher levels of budgetary participation are related to higher goal levels.

H_{a2}: Higher levels of motivation are related to higher levels of job performance.

H_{a3}: The relation between goal level and motivation is moderated by the degree of goal commitment.

H_{a4}: Goal level is related to goal commitment.

H_{a5}: Goal level is related to motivation.

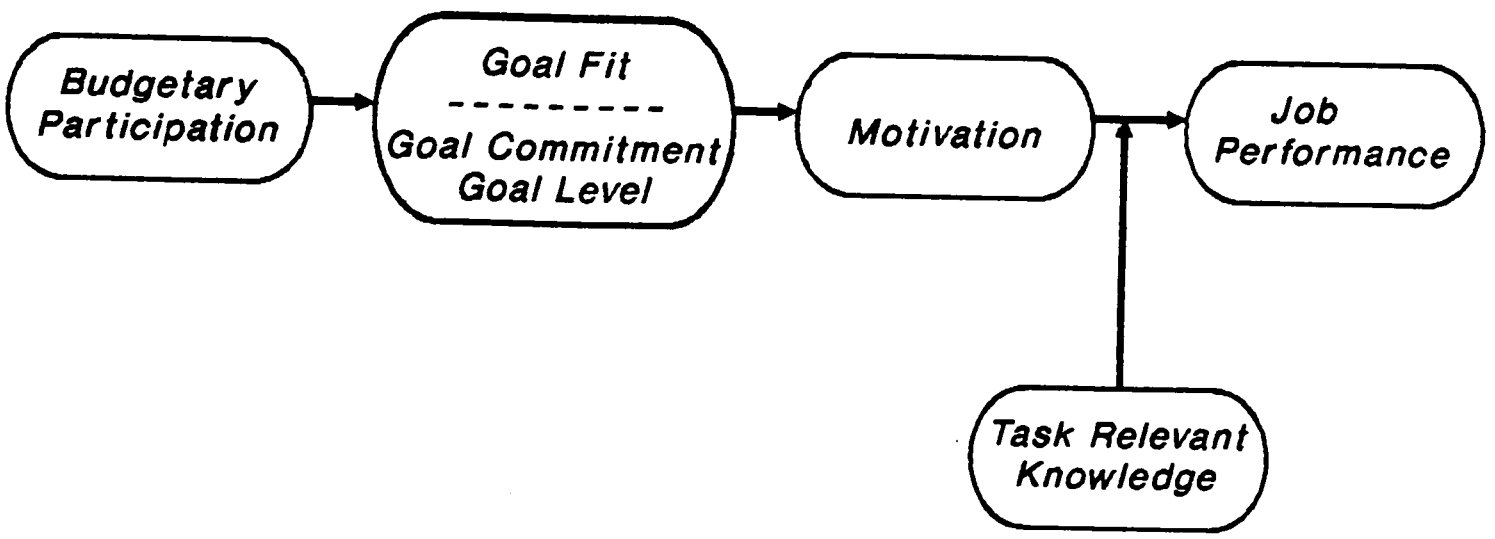

Figure 3.3 Research Model of the Participation-Performance Linkages

H_{a6}: The relation between motivation and job performance is moderated by the level of task relevant knowledge.

Supporting the first hypothesis would imply that, as participation in the budget-setting process increases, the level of goal difficulty will increase. Supporting the second hypothesis would imply that a significant positive relationship exists between a subordinates' motivation to accomplish an objective and his or her performance at that task. Implications of the support of the third hypothesis are that commitment to the budgeted objectives will increase as the level of goal difficulty increases until a threshold level of difficulty is reached. Beyond that point, the degree of goal commitment decreases. Implications of supporting the fourth hypothesis are that as levels of goal difficulty increases, the individual's commitment to that goal level increases. Supporting the fifth hypothesis would indicate that, as levels of goal difficulty increase, a subordinate will become more motivated to accomplish those objectives, recognizing that more effort will be required by them. Implications of supporting the sixth hypothesis would be that individual differences in task relevant knowledge levels will have a significant positive association with levels of job performance.

The research model is proposed to explain performance variability as it is affected by the motivational effects of participation and by the interactive influence of TRK.

Variability in performance is contingent on the degree to which an individual is motivated to accomplish those objectives and the degree that effective task strategies are selected to accomplish them. The general research method will be addressed in the next section.

General Research Design Issues

The study, utilizing passive-observational methods, was performed using a survey research instrument. The design of the research instrument utilized to gather data relating to the hypothesized relationships will be discussed next, followed by a brief description of the population sampled, and concluding with a description of the data collection techniques used.

Development of the Research Instrument

A questionnaire was employed to measure the constructs of interest. The research instrument was developed in two phases. The first phase consisted of a submission of a part of the questionnaire to "expert" managers for their evaluation and comments on the task relevant knowledge factor. In the second phase, the entire questionnaire was pretested using a smaller sample of managers from the target population.

Measurements

The study used a number of measures that have been previously validated in other studies. Milani's [1975] measure of the extent the budget is participatively determined was used to estimate the degree to which an individual influences the budget. This measure, widely used in similar studies, enables the results to be compared with those of other studies of participation. Milani's measure of budgetary participation consists of five items on a seven-point Likert-type scale. The overall score for the participation construct is the total of the five scores. Internal reliability of the measures was determined by computing a Cronbach alpha coefficient of internal reliability. A self-reported measure of managerial performance was utilized as supported by prior studies (Merchant [1981]; Tiessen and Waterhouse [1983]).

Goal commitment, goal level, and motivational constructs were discussed extensively in Hollenbeck and Klein [1987]. This study used a direct commitment measure of goal commitment employed by Yukl and Latham [1978]. Their measure was used in a test of the concept by Locke [1968] that goal commitment would have a moderating influence between goal difficulty (level) and motivation. In addition, the goal commitment measures devised by Yukl and Latham [1978] relating to the determination and effort of the individual was utilized in this study.

Goal level differences have been examined using measures capturing variation in goal difficulty. This study employed measures developed in Kenis [1979], whereby goal difficulty measures were obtained from a four-item seven-point Likert-type scale and used in Hirst and Lowy [1990]. The items asked whether goals were fairly easy to attain (reverse item), the amount of effort required to attain the goals, and how difficult it was to attain budgeted objectives. The fourth item asked the respondents to rate the goals on a "too loose" to "too tight" scale. Internal consistency calculated using Cronbach's coefficient alpha were calculated to compare to Hirst and Lowy reliability measures of 0.63.

Motivation has been operationalized by measuring the intrinsic motivation felt by the subordinate. Hackman and Porter [1968] developed a three-item scale for intrinsic motivation later used by Hackman and Lawler [1971], Dermer [1975], Kenis [1979], and Merchant [1981]. This scale which measured the extent participants felt personal satisfaction and self-esteem when budgeted goals were achieved was employed in this study. Internal reliability coefficients will be calculated and compared to reliability measures of 0.79 found by Kenis.

The measures for task relevant knowledge were developed in this study. As a result, a significant part of this research was to focus on the development and validation of

measures for this construct. The procedure used for doing this was as follows. An instrument was pretested utilizing a small number of individuals. Questions for the instrument were devised to determine the level of task relevant knowledge of the respondents. After the respondents answered the questions, the researcher debriefed the subjects in order to determine whether the measures captured the construct of interest (Alreck and Settle [1985]). Once the questions eliciting the level of task relevant knowledge from the respondents was developed, a method to confirm the validity of the measure was addressed. It was reasoned that, since the managers being sampled had all been certified by passing examinations covering their skills in the administrative, personal, and interpersonal facets of management, the test scores might be an objective measure of their knowledge. That is to say, the degree of task relevant knowledge the individuals had acquired through the test-taking period, primarily from their formal education, should be reflected in their test scores. If this is the case, the measure of TRK developed in this study and the test scores of the individuals should be correlated if they are measures of the same construct. Based on this assumption, the scores of the respondents were matched with the TRK measure to determine if the test scores can serve to confirm their validity.

The Population for Study

A nationwide mailing list consisting of 1,632 managers furnished by the Institute of Certified Professional Managers (ICPM) was employed to select a sample for investigation. Certification by ICPM requires the prospective members to fulfill certain levels of educational and experiential requirements, followed by passing a three-part test covering personal, administrative, and interpersonal skills. This population was considered acceptable for the purposes of this study because it was believed the managers were familiar with and affected by the factors of interest in the proposed study.

Data Collection Technique

After the research instrument was validated, questionnaires were mailed to a sample of the target population. The number of questionnaires mailed was determined ultimately by the number of usable responses to support the statistical analyses planned. In order to meet those requirements, a follow-up questionnaire was mailed to managers who did not respond to the initial mailing.

Statistical Techniques

The purpose of factor analysis is to characterize the covariance relationships among the many variables in terms of underlying factors (Johnson and Wichern [1988]). These

factors are unobservable and limited in number, and, as such, serve to reduce the number of explanatory variables to consider. The premise underlying this technique is the recognition of the possible existence of a single construct that explains the observed correlations of the variables of interest. In this application, factor analysis was used to confirm the latent structure in the participation-performance link.

A multiple regression analysis procedure was chosen in order to provide more precise predictions of the performance response variable. It was appropriate to use regression analysis for purposes of analyzing the responses in this study because the findings of research in this area are consistent with the view that performance is affected by many attitudinal and cognitive independent factors. For example, the regression coefficients determined by the measure for the goal level construct are hypothesized to be positive for positive levels of goal commitment based on the underlying theory being tested. Multiple regression analysis is highly useful in experimental situations where the experimenter can control the independent variables. In this study, the analysis is based on observational data because none of the independent variables are susceptible to direct control (Neter *et al.* [1985]). In this study, the model being considered is a first-order model with five independent variables.

Path analysis was employed to infer a pattern of causal relationships among a set of observable variables (Dillon and Goldstein [1984]). The purpose of this analysis was to separate the variability in the response factor (performance) explained by the exogenous variables (goal level, goal commitment, task relevant knowledge, and motivation) from the variability due to specific factors not considered and the variability associated with the intercorrelations of the independent variables. In this manner, it was possible to attribute some direct effects due to the exogenous factors being studied and indirect effects due to intervening relationships between exogenous variables and the endogenous variable. In addition, unanalyzed effects can arise because of the correlation among the exogenous variables.

CHAPTER IV

RESEARCH METHOD AND RESULTS

In the previous two chapters, the relevance of participatory budgeting in the current professional environment was established, and a research model was developed based on the theory extracted from Locke [1968] and Murray [1990]. The methods employed to test the research model and those results will be presented in this chapter.

This chapter has six purposes. They are to present: (1) the detailed research design; (2) the development of the research instrument and its contents; (3) the participants of the study; (4) the research instrument distribution and collection techniques; (5) the results of the test for nonresponse bias; and (6) the data analyses.

Detailed Research Design

This study employed passive observational methods, through the use of a survey research instrument, and as such there was no manipulation of independent variables as in a field experiment. Shortcomings of research of this nature include a lack of precision in measuring the variables of interest, the confounding effects of unaddressed independent variables, and the ex post facto nature of the research. The strength of the variables, theory orientation, heuristic

quality of the research, realism, and practical significance are some of the advantages of this type of research (Kerlinger [1973]).

The first phase of the study was the development of the research instrument. The second phase was the distribution of the instrument to the participants.

Development of the Research Instrument

The research instrument was developed in two stages, the first of which involved the development of the questions addressing the task relevant knowledge construct. The second stage involved a pretesting of the questionnaire using 91 of the members of the group involved in the full study. Respondents were asked to include their telephone numbers if they were willing to be contacted after completing the questionnaire. This was done so that any difficulties they encountered with the measures could be addressed before the full sample was surveyed. The subsequent calls made to a number of the pretest respondents indicated that the instrument was not difficult to understand and took fifteen to twenty minutes to complete. Some of the respondents did encounter difficulties answering three of the demographic questions, and these questions were altered to address these problems.

The questionnaire employed five measures developed in prior studies and one developed for this study. The measure

for budgetary participation (BP) was taken from the Milani [1975] study and measures the extent to which the budget is participatively determined. A self-reported measure of job performance (JP), developed and validated in prior studies (Merchant [1981]; Kenis [1979]), was used in this study.

In addition, this study used two measures of commitment. One was a direct measure of goal commitment (GC), while the other relates to effort-related determination both developed by Yukl and Latham [1978]. The Kenis [1979] measure of goal difficulty was employed to determine the goal level (GL) differences for the respondents. Finally, the Hackman and Porter [1968] three-item measure for intrinsic motivation (MOT) was used to gauge the respondents' motivation to accomplish their objectives.

The measure of task relevant knowledge (TRK) was developed in the current research. A series of questions was devised in an effort to determine the respondents' degree of knowledge of the requisite managerial skills necessary to successfully accomplish their particular job-related objectives. The questions were designed to address the functional dimensions of the job including the planning, investigating, coordinating, evaluating, supervising, staffing, negotiating, and representing roles of managers (Mahoney *et al*. [1963]). Based on these dimensions, the process of devising the questions with

respect to TRK consisted of identifying each specific function a manager may be required to perform followed by drafting a question that would elicit the respondent's perception as to his or her respective ability to successfully perform on that dimension. For example, following the identification of the staffing function that a manager may perform, a question addressing the performance of those subordinates hired by the manager was written. This process was repeated for each of the dimensions specified in Mahoney *et al*. [1963].

In addition, since the TRK construct addresses the knowledge a manager uses in performing his/her task, questions were devised addressing the degree a respondent receives continuing training through company-sponsored training programs, professional seminars, and/or subscriptions to professional journals. Finally, the time frame of the acquisition of the individual's knowledge was addressed through a question asking when a respondent's knowledge was acquired.

The demographic section was designed so that characteristics of the respondents could be identified. The age, gender, years with their current firm, years of managerial experience, number of managers in the firm, job title, industry, and level of education were requested.

The instrument was submitted to a pretest sample of ninety-one members of the Institute of Certified

Professional Managers. One purpose of the pretest was to determine the clarity of the questions addressing the TRK construct. In addition, an evaluation of the time required to complete the questionnaire and an estimation of the anticipated response rate from the full sample was provided by the pretest. The pretest also provided an indication that the questions were understandable to the respondents.

Separate from the survey instrument, data were gathered from the Institute of Certified Professional Managers. All of the respondents were identified so that the subjects' examination scores from the certification process could be matched against their responses to the instrument. These data were gathered two months after the initial mailing and one month after the second mailing. This task was accomplished by the researcher by searching the files of the institute and extracting the three examination scores (personal, interpersonal, and administrative skills tests). The test scores are based on a percentage of correct answers to each examination. Once the data had been collected the personal identification of the respondents was discarded.

The Participants of the Study

A mailing list of 1,632 members of the Institute of Certified Professional Managers, who received their professional certification between 1985 and 1991, was provided for purposes of conducting this research. The

institute was formed by members of the International Management Council, management educators, and the National Management Association to promote the management profession. The institute is headquartered at James Madison University.

The institute's stated goals are: (1) to elevate management as a profession; (2) to provide direction for study in the management area; (3) to provide an objective evaluation of managerial competence; and (4) to recognize demonstrated competence in the management profession. To receive certification, prospective members must meet experiential and educational requirements and pass an examination, which includes three sections covering personal, interpersonal, and administrative skills.

Certified Managers come from multiple disciplines not confined solely to business. Some of the Certified Mangers are engineers, medical doctors, and pilots, for example. Accounting, insurance and finance professionals are represented in the membership from the business field. Certification of the membership remains current for a five-year period, at which time the members must re-certify. Re-certification is accomplished by providing evidence that the member has undertaken fifty hours of management education, which may consist of academic course hours, company-sponsored management development courses, management development courses carrying Continuing Education Units

credit, teaching management training courses, or self-study of management-related texts.

Research Instrument Distribution and Collection Technique

A mailing, including the questionnaire, cover letter, and return envelope, was sent to 1,541 Certified Managers (see Appendix B). One month after the initial mailing, a second mailing with the same materials and an altered cover letter was sent to those members who did not respond to the first mailing (see Appendix C). As the responses were received, each questionnaire was identified as to the respondent, the date it was received, and the state from which it was sent. At this time, the responses were encoded in data files. One month after the second mailing, the respondents' test scores were obtained from the Institute of Certified Professional Managers and matched to the individuals' responses to the questionnaires. Subsequent responses received were excluded from the data set.

Of the 1,541 Certified Managers who were sent a questionnaire, ninety-four were returned as undeliverable. Of the remaining 1,447 members of the institute, 701 questionnaires were returned for an initial response rate of 48.4%. Fifty-one responses were unusable leaving 650 usable responses for a final testable response rate of 44.9%.

Table 4.1 summarizes the characteristics of the respondents from the membership of the Institute of

Table 4.1 Demographic Characteristics of the Respondents

Characteristic	n	Mean	Std. Deviation
Years employed in current firm	648	14.2	8.9
Tenure with current job title	647	4.8	4.1
Total years of managerial experience	648	13.7	7.2
Total firms worked for	648	3.2	2.2
Number of managers in the firm	543	303.2	907.9
Educational level	649	3.1	0.8
Age	645	45.4	7.8

Certified Managers. On average, the respondents were 45 years of age, were predominantly male (82.6%), had been employed by their current firm for 14.2 years, and had held their current job title for 4.8 years. The average respondent had 13.7 years of managerial experience and had worked for 3.2 firms in their career.

Test for Nonresponse Bias

An investigation of significant differences between the first and last 220 responses was undertaken to evaluate whether nonresponse bias was evident. At the five-percent level of significance, there were no significant differences between any of the mean levels of the study variables or in mean levels of years of experiences, level of education, age, or number of days spent in professional seminars. These findings support the contention that the respondents are representative of those members who chose not to respond to the survey (Armstrong and Overton [1977]).

Data Analyses Procedures

This section contains the analysis procedures used in the examination of the collected data. The first section includes a discussion of the technique employed for observations with missing values. The second section is a discussion of the factor analysis technique used to attain the necessary parsimony for practical understanding and

interpretation of the data. The third section is a discussion of the tests employed to examine the moderating influences hypothesized in Chapter III that incorporates the results from the factor analyses performed. The path analyses are presented in the fourth section in which the best fit descriptive model was examined and the remaining hypothesized direct relationships (H_{a1}, H_{a2}, H_{a4}, and H_{a5}) were tested. An ancillary topic, the nature of the relationships among goal level (GL), goal commitment (GC), and motivation (MOT) is discussed in the fifth section.

Data Reduction and Validation

Of the original 701 responses collected from the group sampled, fifty-one had serious omissions so that they were excluded from the subsequent analysis. These exclusions were based on respondents who left questions blank so that entire constructs could not be measured or estimated. Attempts were made to estimate missing values by calculating a series of regressions based on those responses for related questions that were answered (Little and Rubin [1987]). For example, if a respondent did not answer any of the questions for the GL construct, that observation was eliminated. If, however, only one or two of the answers for the GL questions were missing, a regression using the remaining GL values as independent variables and the missing values as dependent variables was developed. If these

predictor models explained over 40% of the variation of the dependent variable (the missing value), then the model was used to predict the missing value for the observation. In this manner, it was possible to use 650 observations for the data analysis.

Factor Analysis

Typical of social sciences research, this study deals with multidimensional measurements, the number of which is sufficiently large that analysis and interpretation is not practical. As a result, factor analysis was performed on the items used to comprise the TRK factor. Employing factor analysis had three objectives: (1) to provide a description of TRK; (2) to confirm that budget-related incremental TRK is separate from general TRK; and (3) to condense the twenty-seven question measure to a simple structure summate for purposes of hypothesis testing. For those measures employed in this study that had been validated in prior research, factor analyses were performed to support their use in this research.

For the multiple measures of BP, GC, JP, and MOT, all of the variables loaded on one factor each based on the MINEIGEN criterion. Factor analysis for all measures was accomplished using the principal components method. The explained variance of each factor was 0.7157 for BP, 0.7084 for GC, 0.6291 for JP, and 0.6095 for MOT. For the GL

measures, the variables loaded on two factors with total explained variance of 0.6722. For the first factor, all of the loadings were positive. Since the previous research from which this measure was taken used the measures additively, the measures were summed to attain an overall measure for GL.

All of the measures were regressed against JP in two different forms to determine the appropriate method to combine the measures. This was accomplished by computing the factor in summated form and weighted by their respective factor loadings and performing regression analysis to determine if there were significant differences in explanatory power between the two variable forms. If they were not significantly different, the summated measures would have been used for additional analysis. No differences were indicated. In addition, Cronbach [1951] alphas were computed for all individual measures to assess internal reliability for the dimensions used in this study. Results of these computations are presented in Table 4.2. This was followed by computation of the correlations among the dimensions of BP, GC, GL, MOT, TRK, and JP to be used in the path analysis and discussed further in the section regarding the direct, indirect, and residual effects and illustrated in Table 4.3.

In order to identify the TRK construct, factor analyses were performed for the twenty-seven TRK questions using the

Table 4.2 Cronbach Coefficient Alpha

Variable	Raw Variable	Standardized Variable
Job Performance		(0.701733)[a]
JP1	0.593461	0.639223
JP2	0.469127	0.501350
JP3	0.678787	0.679277
Budgetary Participation		(0.898652)[a]
BP1	0.856717	0.857212
BP2	0.886121	0.886662
BP3	0.868530	0.870247
BP4	0.888635	0.890394
BP5	0.874862	0.876179
Goal Level		(0.634807)[a]
GL1	0.533625	0.536138
GL2	0.424320	0.432561
GL3	0.455615	0.463055
GL4	0.534434	0.534260
GL5	0.806259	0.802119
GL6	0.618025	0.620347
Goal Commitment		(0.914087)[a]
GC1	0.931960	0.933431
GC2	0.893841	0.910725
GC3	0.880079	0.895284
GC4	0.863546	0.882345
GC5	0.861710	0.879555
GC6	0.869579	0.883951
Motivation		(0.676613)[a]
MOT1	0.42025	0.454779
MOT2	0.38252	0.406867
MOT3	0.81071	0.811586
Task Relevant Knowledge		(0.817274)[a]
TRK7	0.795718	0.796978
TRK15	0.795894	0.799414
TRK16	0.78190	0.787036
TRK19	0.784951	0.788883
TRK23	0.773559	0.778428
TRK24	0.782190	0.785828
TRK27	0.811554	0.813310

[a] Cronbach coefficient alpha for standardized variables

Table 4.3 Pearson Correlation Matrix
(Level of Significance in parentheses)

		BP	GL	GC	MOT	TRK	JP
Budgetary Participation	(BP)	1	--	--	--	--	--
Goal Level	(GL)	.095 (.0110)	1	--	--	--	--
Goal Commitment	(GC)	.416 (.0001)	.119 (.0028)	1	--	--	--
Motivation	(MOT)	.109 (.0016)	.068 (.0848)	.337 (.0001)	1	--	--
Task Relevant Knowledge	(TRK)	.177 (.0001)	.154 (.0001)	.434 (.0001)	.467 (.0001)	1	--
Job Performance	(JP)	.389 (.0001)	.195 (.0001)	.559 (.0001)	.278 (.0001)	.486 (.0001)	1

principal components and maximum-likelihood methods. The maximum likelihood method employs the best estimate of reproduced correlation matrix in the population as the principle for extracting the factors. This method uses an iterative technique to arrive at communality estimates in order to estimate factor scores. Communalities are squared correlations and, as such, will fall between zero and one.

In this study, the communalities exceeded one suggesting an ultra-Heywood case (SAS/STAT [1989]). This implies that some unique factor has negative variance, which renders a solution invalid. For this reason, the principal components method was employed in further analysis.

The initial factor analysis, employing the principal components method, resulted in six factors based on the MINEIGEN criterion (factors were only examined if their eigenvalues were equal to or greater than one), explaining 52.95 percent of the variance. Factors four, five, and six explained approximately 5.14, 4.61, and 3.86 percent of the variance, respectively.

VARIMAX and PROMAX rotations were performed on the TRK questions to facilitate interpretation of the construct. The first oblique rotation resulted in six factors. The first three factors are illustrated in Table 4.4. TRK questions 18 and 26 loaded on the sixth factor while questions 8, 13, and 21 loaded on the third factor. All five questions were reverse items intended to elicit

Table 4.4 Factor Loadings - Varimax Rotation

Factor Eigenvalue	1 3.927	2 3.501	3 1.893	Description of Measure
TRK1	-.004	.788	.026	Discussion with superior
TRK2	.107	.678	.302	Encouraging discussion
TRK3	-.051	.592	.364	No discussion of actions
TRK4	.139	-.171	.092	Assumed knowledge
TRK5	.229	-.016	-.036	Educational preparation
TRK6	-.016	.714	.223	Discussion with superior
TRK7 *	.715	.060	.036	Performance of hires
TRK8	-.200	.463	.431	Actions rarely discussed
TRK9	.101	.568	-.266	Discussion after budget
TRK10	.229	.147	.111	Experiential preparation
TRK11	.142	.621	-.079	Ask for suggestions
TRK12	.249	-.007	.082	Experience on other jobs
TRK13	.025	.062	.694	Failure to get resources
TRK14	.067	.704	-.137	Suggest actions anytime
TRK15*	.613	-.025	-.047	Get along with others
TRK16*	.762	.031	-.165	Trainee performance
TRK17	.176	.130	.000	Assumed knowledge
TRK18	-.020	-.061	.017	Lack technical knowledge
TRK19*	.594	.100	.214	Good use of resources
TRK20	.607	.148	.210	Subordinate motivation
TRK21	.274	-.063	.485	Coordination difficulty
TRK22	.249	.154	-.045	Promotion knowledge
TRK23*	.614	-.014	.187	Activity planning
TRK24*	.531	.022	.263	Problem assistance
TRK25	.500	.039	.488	Fail to alter activities
TRK26	.438	.011	.350	Failure to evaluate
TRK27*	.437	-.021	-.078	Knowledge of employee job

* Utilized in subsequent TRK measure.

responses as to levels of general task relevant knowledge.

TRK questions 4 and 17 loaded on the fourth factor. Both of these questions elicited responses from the subjects as to the degree their superiors assumed the respondent knew what actions would be necessary to accomplish their budgeted objectives (one specifically addressed this in the budgetary interaction between subordinate and superior).

TRK questions 5, 10, and 12 loaded on the fifth factor. These questions dealt with the source of preparation for successfully accomplishing their objectives (educational background, previous experience at this job, or previous experience at other similar jobs).

The second, third, fourth, fifth and sixth factors were not interpreted to be representative of the TRK construct of interest. As a result, these factors were not included in further analysis. In addition, TRK question 22 did not load on any factor, and TRK question 25 loaded on multiple factors. A PROMAX rotation analysis was performed excluding the second factor questions. This iteration resulted in TRK question 20 loading on the fifth factor (see Table 4.5). The previously dsicussed questions second through sixth factors previously described were eliminated from further analysis.

Factor 1 represents general task relevant knowledge used by the respondents in their respective departmental operations. The measures for factor 2 represent the incremental task relevant knowledge that may be imparted to

Table 4.5 Factor Loadings - PROMAX Rotation

Factor	1	2	3	4	5
Eigenvalues	3.344	1.770	1.690	1.560	1.446
TRK4	-.011	-.016	.837	-.127	.002
TRK5	.197	-.119	-.131	.637	.118
TRK7 *	.834	.014	-.092	.108	-.212
TRK8	-.301	.531	-.122	.438	-.110
TRK10	.094	.082	.086	.633	.108
TRK12	.202	-.006	.050	.626	-.027
TRK13	-.137	.692	.260	.029	-.196
TRK15*	.583	-.090	.085	.097	.056
TRK16*	.847	-.180	-.051	.092	-.064
TRK17	.015	-.040	.801	.090	-.027
TRK18	-.338	.001	-.038	.098	.882
TRK19*	.499	.194	.162	.119	.053
TRK20	.470	.241	-.033	-.004	.406
TRK21	.104	.512	-.105	.023	.169
TRK22	.172	.047	.204	.150	.043
TRK23*	.437	.141	.155	.066	.325
TRK24*	.433	.233	.265	.022	.245
TRK25	.375	.565	-.086	-.224	.113
TRK26	.226	.425	-.158	-.100	.402
TRK27*	.432	-.109	.111	.056	.281

* Utilized in subsequent TRK measure.

the respondents through the actual budget-setting process itself. This construct was not included in the theoretical or research model. All of the factors were regressed against job performance to gauge their explanatory power. Only the first two factors proved significant as explanatory variables. From an inspection of the items of the first factor, it was concluded that these measures best represented the exploratory construct of task relevant knowledge.

Finally, a factor analysis was performed on the general TRK questions alone. Based on the MINEIGEN criterion, only one factor was extracted; therefore a rotation was not possible. The factor loadings for TRK questions 7, 15, 16, 19, 23, 24, and 27 were: 0.68887, 0.65966, 0.72102, 0.70919, 0.77338, 0.72416, and 0.56865, respectively. This factor explained 48.26 percent of the variance and its eigenvalue was 3.378 (see Table 4.6).

Factor analysis, using the principal components method, was also performed on the measures previously validated in other studies that were used in this study. Those results are illustrated in Table 4.7 and include descriptive statistics on each of the measures used in the study. For the GL measure, the factor loadings presented are the result of a VARIMAX rotation.

Correlation analysis was performed on the TRK measures and the test scores of the respondents in their

Table 4.6 Factor Loadings - VARIMAX Rotation

General Task Relevant Knowledge (eigenvalue 3.38)		Factor Loading
1. Employees I have hired have performed adequately	TRK7	0.68887
2. I get along well with other department managers with whom I must deal.	TRK15	0.65966
3. Employees I have trained have performed adequately.	TRK16	0.72102
4. I employ the department's resources to the best advantage of my company.	TRK19	0.70919
5. I know how to plan my department's activities.	TRK23	0.77338
6. I know where to get help with problems that come up in my department's operations.	TRK24	0.72416
7. I know what my subordinates must do to accomplish their jobs.	TRK27	0.56865

Table 4.7 Descriptive Statistics on Measures/Scales

Variable	Measure	Mean	Standard Deviation	Factor Loading(s) 1	2
Budgetary Participation eigenvalue 3.58	1	3.88	1.81	0.906	
	2	3.51	2.02	0.806	
	3	4.26	1.90	0.870	
	4	3.68	1.78	0.801	
	5	4.67	1.96	0.843	
Goal Level eigenvalues 2.44;1.59 Varimax rotation	1	2.57	1.00	0.800	0.112
	2	3.36	1.04	0.858	-0.283
	3	3.42	1.05	0.807	-0.324
	4	3.69	0.99	0.592	-0.569
	5	2.46	1.04	0.053	0.867
	6	3.73	0.94	0.249	-0.562
Goal Commitment eigenvalue 4.25	1	2.85	1.54	0.576	
	2	2.26	1.19	0.773	
	3	1.99	1.06	0.850	
	4	2.36	1.23	0.930	
	5	2.24	1.19	0.941	
	6	2.14	1.08	0.920	
Motivation eigenvalue 1.89	1	1.47	0.87	0.760	
	2	1.60	0.85	0.856	
	3	1.94	1.36	0.759	
Job Performance eigenvalue 1.83	1	2.37	1.11	0.875	
	2	2.55	1.20	0.884	
	3	2.03	0.75	0.531	

certification procedure examining their knowledge in the areas of personal, interpersonal, and administrative skills. The analysis revealed that none of the correlations among the TRK measure and the examination scores were significant (.0594, p=0.14, n=610 for personal skills test score; .0367, p=.3649, n=611 for administrative skills test score; -.0010, p=.8061, n=610 for interpersonal skills test score). These results do not support the contention that any relationship between the TRK measures and the test scores exists.

Moderated Multiple Regression (MMR) Analyses

It was hypothesized that there is a moderating influence between GL and MOT through the effects of GC. In addition, a similar effect for TRK was hypothesized in the association between MOT and JP. To test for these moderating influences, two MMR analyses were performed.

A moderating influence would be indicated if GC (TRK) affects the form and strength of the relationship between GL (MOT) and MOT (JP) solely through its interaction with GL (MOT) (Sharma *et al*. [1981]). The MMR analysis employs a series of forward-solution regression models entering the independent variables (GL/MOT), the hypothesized moderating variables (GC/TRK), and an associated interaction term into the model in that sequence. Furthermore, when the existence of a moderating influence is supported, the nature of the moderating influence may be determined. For example, the

degree of GC may be a quasi-moderator if the interaction term is significant while there is a significant direct relationship between GL and MOT. Alternatively, it may be a pure moderator if the interaction is significant while the direct association between GL and MOT is non-significant (Sharma *et al.* [1981]; Arnold [1982]).

Tests of Moderating Influences Results

Table 4.8 is a presentation of the results of the MMR analysis of the moderating effects of GC on the association of GL and MOT. In the first regression model investigating the influence of GC, the independent factor GL is only moderately related ($p=.064$; $t=1.856$) to the dependent factor MOT. In the second model including GC as an independent factor, GL is non-significant while GC is significant ($p=.001$; $t=8.935$). In the third model, a multiplicative interaction term is introduced into the model. In this model, GC ($p\leq.0001$; $t=4.054$), GL ($p=.013$; $t=2.494$), and the interaction term ($p=.0191$; $t=-2.35$) are all significant at the .05 level indicating support for H_{a2} positing that the relationship between GL and MOT is moderated by the level of GC. In a study with a large sample size such as this, the significance of the GL factor in the first model can best be described as moderately significant since the sample size is such that some level of statistical significance should be expected. Because of this, one can argue that GC and its

Table 4.8 Moderated Multiple Regression Analyses
Goal Commitment

First Model: Analysis of Variance
Dependent variable: Motivation

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	1	18.86477	18.86477	3.443	0.0640
Error	629	3446.13037	5.47874	R-Square	0.0054
C Total	630	3464.99514		Adj R-sq	0.0039

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob >|T|
Constant	1	4.091619	0.504005	8.118	0.0001
Goal Level	1	0.047883	0.025805	1.856	0.0640

Second Model: Analysis of Variance
Dependent variable: Motivation

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	2	408.04432	204.02216	41.849	0.0001
Error	626	3051.87169	4.87519	R-square	0.1179
C Total	628	3459.91601		Adj R-sq	0.1151

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob >|T|
Constant	1	2.753932	0.498854	5.521	0.0001
Goal Level	1	0.021282	0.024531	0.868	0.3860
Goal Commitment	1	0.134420	0.015044	8.935	0.0001

Third Model: Analysis of Variance
Dependent variable: Motivation

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	3	434.76942	144.92314	29.941	0.0001
Error	625	3025.14659	4.84023	R-square	0.1257
C Total	628	3459.91601		Adj R-sq	0.1215

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob >|T|
Constant	1	0.441080	1.102674	0.400	0.6893
Goal Level	1	0.139581	0.055965	2.494	0.0129
Goal Commitment	1	0.311553	0.076859	4.054	0.0001
Interaction	1	-0.008981	0.003822	-2.350	0.0191

effect on the GL-MOT linkage is not conclusive. This is consistent with the Murray [1990] interpretation of its effects since he theorized that GC has both moderating and intervening characteristics.

The second MMR analysis was performed investigating the moderating influence of TRK on the relationship between MOT and JP and results are presented in Table 4.9. In the first regression model, MOT ($p \leq .0001$; $t=7.319$) was regressed on the dependent variable JP and was found to be significant. In the second model, TRK ($p \leq .0001$; $t=11.386$) was included as an independent variable with MOT ($p=.0842$; $t=1.729$). In the third model, a multiplicative interaction term for MOT and TRK ($p=.7056$; $t=.378$) was included with MOT ($p=.6636$; $t=.435$) and TRK ($p \leq .0001$; $t=6.383$). The results indicate that TRK is a predictor variable. This result does not support H_{a6} that TRK moderates the relationship between MOT and JP.

In summary, hypotheses 1 and 4 were supported implying that participation is positively related to goal levels and goal levels are positively related to goal commitment. No support was found for the positive association between motivation and performance or goal level and motivation as stated in hypotheses 2 and 4, respectively. Only weak support was found for a moderating influence for the goal commitment influence stated in hypothesis 3. Finally, the data did not support the moderating influence for task

Table 4.9 Moderated Multiple Regression Analyses
Task Relevant Knowledge

First Model: Analysis of Variance
Dependent variable:Job Performance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	1	292.97298	292.97298	53.567	0.0001
Error	640	3500.33076	5.46927	R-Square	0.0772
C Total	641	3793.30374		Adj R-sq	0.0758

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob >|T|
Constant	1	5.506136	0.217628	25.301	0.0001
Motivation	1	0.287885	0.039334	7.319	0.0001

Second Model:Analysis of Variance
Dependent variable:Job Performance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	2	843.08354	421.54177	96.830	0.0001
Error	614	2673.01371	4.35344	R-square	0.2398
C Total	616	3516.09724		Adj R-sq	0.2373

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob >|T|
Constant	1	3.074340	0.289442	10.622	0.0001
Motivation	1	0.070240	0.040613	1.729	0.0842
Task Relevant Knowledge	1	0.261168	0.022937	11.386	0.0001

Third Model:Analysis of Variance
Dependent variable:Job Performance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	3	843.70643	281.23548	64.511	0.0001
Error	613	2672.39081	4.35953	R-square	0.2400
C Total	616	3516.09724		Adj R-sq	0.2362

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	T for HO: Parameter=0	Prob >|T|
Constant	1	3.246739	0.540286	6.009	0.0001
Motivation	1	0.039528	0.090848	0.435	0.6636
Task Relevant Knowledge	1	0.249228	0.039047	6.383	0.0001
Interaction	1	0.001973	0.005219	0.378	0.7056

relevant knowledge in the association between motivation and performance as stated in hypothesis 6.

Based on these results, the data suggest that there is ample evidence to consider a best fit descriptive model of these relationships, including the hypothesized moderating influences of goal commitment and task relevant knowledge as predictor variables, along with the other factors of participation, motivation, and goal level. As a result, path analysis was performed to provide a basis for future theoretical development of the relationships between and among the measures previously investigated and task relevant knowledge measured in this study. That analysis is presented in the next section.

Path Analysis Results

Figure 4.1 exhibits a recursive causal model depicting the hypothesized relationships in this study. It was hypothesized that BP influences GL, GL affects MOT, GC influences MOT, MOT in turn affects JP, and this last relationship is affected by TRK. The results of the MMR analyses suggest that TRK is a predictor variable, and there is only weak support for the proposition that GC moderates the association between GL and MOT. Therefore, the path analysis procedures employed in this study treated all independent variables as predictor variables.

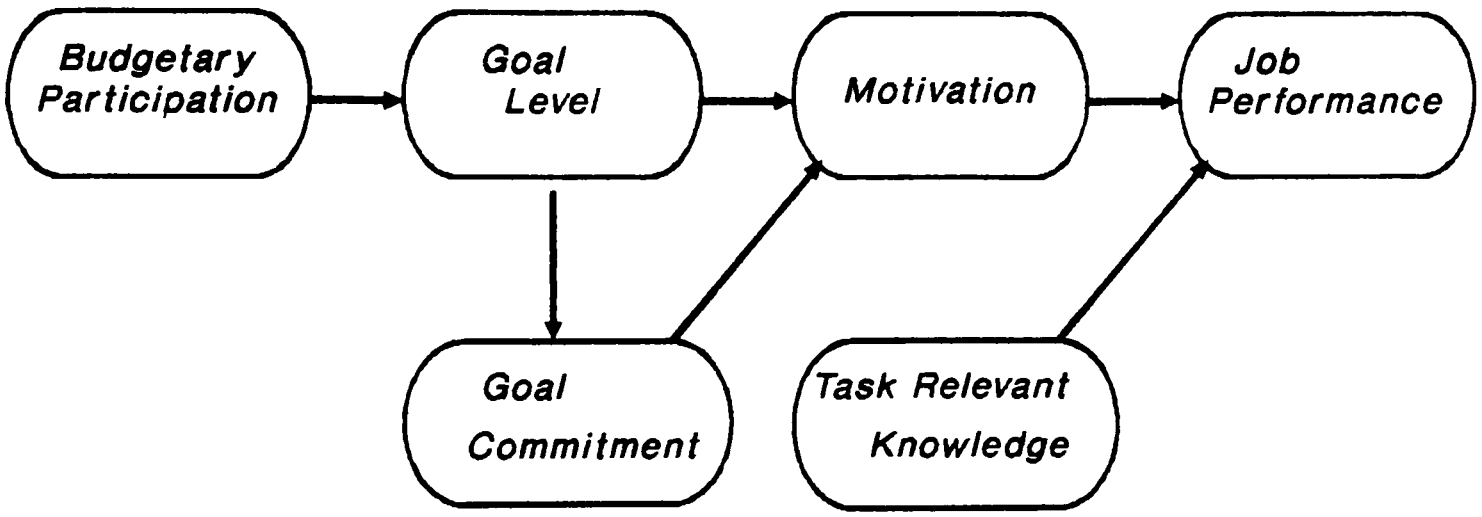

Figure 4.1 Recursive Causal Model of the Participation-Performance Relationships

Table 4.10 Path Analysis Results

Full Model N=600

Dependent variable	Explanatory variable	Unstandardized regression coefficient	Path coefficient	R^2
Job Performance	Budgetary Participation	.056	.185[a]	
	Goal Level	.053	.080[b]	
	Goal Commitment	.136	.333[a]	
	Task Relevant Knowledge	.142	.282[a]	
	Motivation	.009	.009[ns]	
	Constant	.793		
				.401[a]

Trimmed Model n=602

Dependent variable	Explanatory variable	Unstandardized regression coefficient	Path coefficient	R^2
Job Performance	Budgetary Participation	.055	.182[a]	
	Goal Level	.052	.079[c]	
	Goal Commitment	.137	.338[a]	
	Task Relevant Knowledge	.144	.287[a]	
	Constant	.810		
				.402[a]

[a] $p \leq .0001$, [b] $p=.0136$, [c] $p=.0147$

Note: The above are unadjusted R^2. The difference between the adjusted and unadjusted R^2 is less than .006.

A multiple regression analysis was employed to test a structural equation including JP as an endogenous variable and BP, GL, GC, MOT, and TRK as exogenous variables. The full model incorporating all factors was first examined to determine the significance of the direct effects of the independent variables on JP. For the MOT measure, the full model analysis found no significant direct effects ($t=0.250$; $p=0.8029$) on JP (see Table 4.10). Significant direct effects for BP, GC, GL, and TRK, however, were observed.

The above models, after eliminating MOT (which had a non-significant beta coefficient), were recalculated as suggested by Duncan [1966]. This trimmed model was compared to the full model for significant reduction in explanatory power and none was found (Pedhazur [1982]). In Table 4.9, the results of the analysis of the trimmed model are presented. All of the remaining antecedent factors are significant with $p \leq .0001$ for BP, GC and TRK, and $p=.0147$ for GL.

Based on the findings of the MMR analysis and the theoretical basis for the variable interrelationships, the paths of the antecedent relationships were then investigated employing the same techniques. Prior path analytic studies have employed these procedures (Teas *et al.* [1979]; Behrman and Perreault [1984]; and Fry *et al.* [1986]).

With TRK as the dependent variable, a model including BP, GC, GL, and MOT as independent variables was analyzed

resulting in all significant effects with the exception of BP (t=0.187; p=.8516). A trimmed model excluding BP was then analyzed resulting in significant effects for GC, GL, and MOT (see Table 4.11). Again, the two models were compared for significant reductions in explanatory power and none was found.

This procedure was repeated for all antecedent relationships: (1) GC as the dependent variable and BP and GL as predictor variables; (2) MOT as the dependent variable and GC, GL, and BP as predictors; (3) GL as the dependent factor and BP as the independent variable; and (4) GC as the dependent and BP as the independent factor. Results of these analyses are presented in Table 4.12.

The final path model is depicted in Figure 4.2. The model is supported by the data and is consistent in many respects with prior research. Table 4.13 summarizes the relationships among the variables in this study. Based on the total correlation between individual constructs measured in this study, the direct, indirect, and residual effects are computed for all paths leading to the dependent variable. The path model suggests there are significant paths involving indirect and direct relationships between BP and JP. The explanatory power of the model considering all the paths for the group involved in the study is (R^2=) 41.7 percent.

Table 4.11 Path Analysis Results - Task Relevant Knowledge

Full Model n=601

Dependent variable	Explanatory variable	Unstandardized regression coefficient	Path coefficient	R^2
Task Relevant Knowledge	Budgetary Participation	.004	.007[ns]	
	Goal Level	.135	.103[d]	
	Goal Commitment	.229	.282[a]	
	Motivation	.741	.368[a]	
	Constant	5.206		
				.311[a]

Trimmed Model n=601

Dependent variable	Explanatory variable	Unstandardized regression coefficient	Path coefficient	R^2
Task Relevant Knowledge	Goal Level	.135	.103[e]	
	Goal Commitment	.231	.285[a]	
	Motivation	.741	.368[a]	
	Constant	5.250		
				.311[a]

[a] $p \leq .0001$, [d] $p=.0029$, [e] $p=.0027$,
Note: The above are unadjusted R^2. The difference between the adjusted and unadjusted R^2 is less than .006 for all models.

Table 4.12 Path Analysis Results - Goal Commitment

Full Model n=631

Dependent variable	Explanatory variable	Unstandardized regression coefficient	Path coefficient	R^2
Goal Commitment	Budgetary Participation	.300	.405[a]	
	Goal Level	.123	.075[d]	
	Constant	5.406		
				.175[a]

Full Model n=627

Dependent variable	Explanatory variable	Unstandardized regression coefficient	Path coefficient	R^2
Motivation	Budgetary Participation	-.013	-.044[ns]	
	Goal Level	.024	.025[ns]	
	Goal Commitment	.016	.355[a]	
	Constant	3.017		
				.117[a]

Trimmed Model n=640

Dependent variable	Explanatory variable	Unstandardized regression coefficient	Path coefficient	R^2
Motivation	Goal Commitment	.132	.337[a]	
	Constant	3.181		
				.113[a]

Table 4.12 (Continued)

Full Model n=633

Dependent variable	Explanatory variable	Unstandardized regression coefficient	Path coefficient	R^2
Goal Level	Budgetary Participation	.043	.095[e]	
	Constant	18.338		
				.009[e]

Full Model n=643

Dependent variable	Explanatory variable	Unstandardized regression coefficient	Path coefficient	R^2
Goal Commitment	Budgetary Participation	.311	.416[a]	
	Constant	7.615		
				.173[a]

[a] $p \leq .0001$ [d] $p=.0394$, [e] $p=.0163$ Note: The above are unadjusted R^2. The difference between the adjusted and unadjusted R^2 is less than .006 for all models.

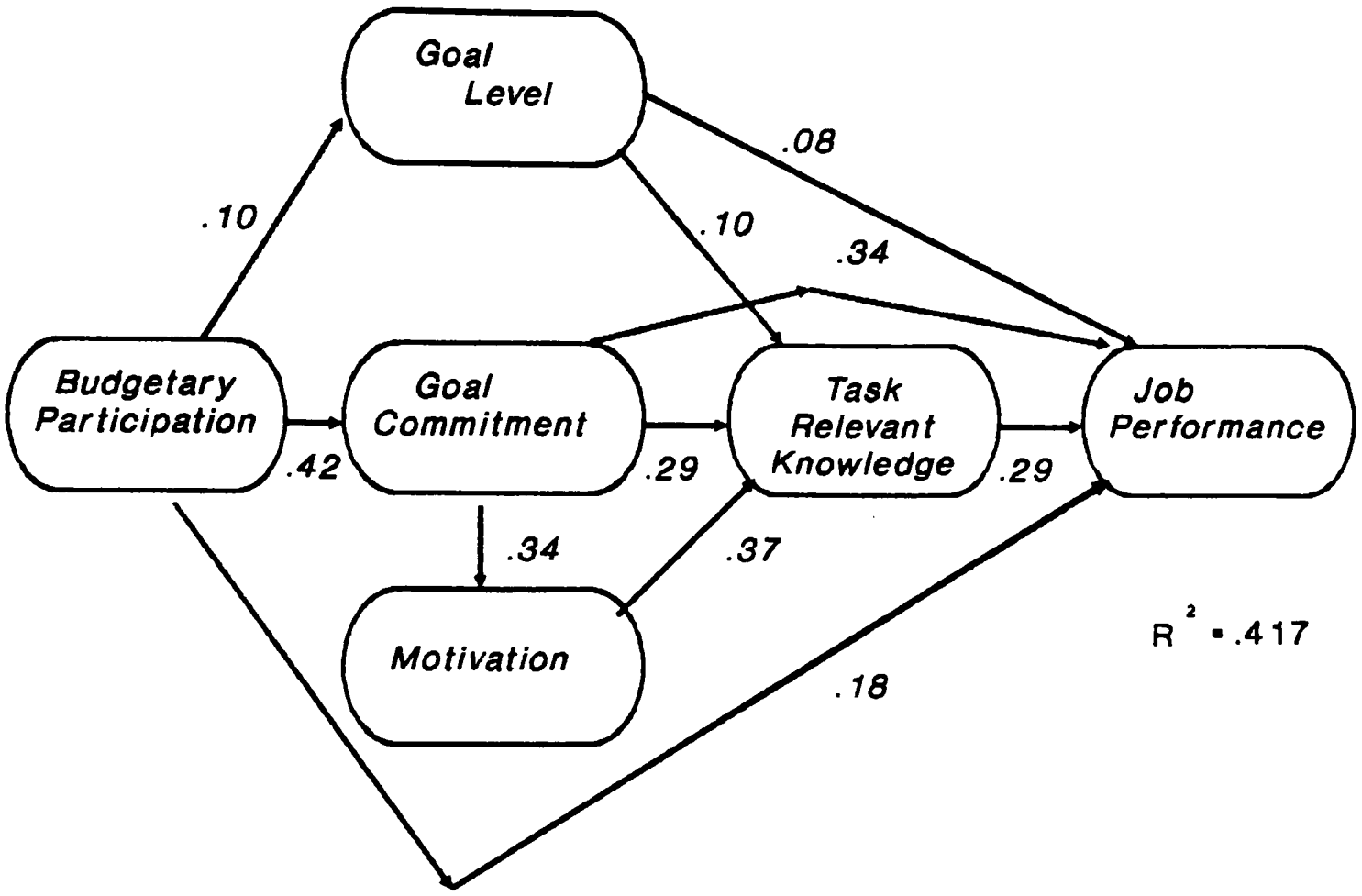

Figure 4.2 Path Model of Participation-Performance Factors

Table 4.13 Direct, Indirect and Residual Effects of Path Model

Path*	Direct Effects	Indirect Effects	Residual Effects	Total Correlation
BP on JP	.180	.204	.005	.389
GL on JP	.080	.029	.086	.195
GC on JP	.340	.121	.098	.559
MOT on JP	---	.107	.171	.278
TRK on JP	.290	---	.196	.486
BP on TRK	---	.175	.002	.177
GL on TRK	.100	---	.054	.154
GC on TRK	.290	.126	.018	.434
MOT on TRK	.370	---	.097	.467
BP on MOT	---	.143	-.034	.109
GC on MOT	.340	---	-.003	.337
BP on GL	.100	---	-.005	.095
BP on GC	.420	---	-.004	.416

* BP = Budgetary Participation
JP = Job Performance
GL = Goal Level
GC = Goal Commitment
MOT = Motivation
TRK = Task Relevant Knowledge

The Relationship Between Goal Level and Goal Commitment

Erez and Zidon [1984] examined the association between goal difficulty and performance in a laboratory setting. Results of their research indicated that goal level is positively related to performance until a threshold level of goal difficulty is reached beyond which the relation became negative. These findings of the effects of goal level and goal commitment suggest that, for the association to positively influence the motivation of the individual, there must be a requisite "goal fit." That is to say, as the level of difficulty increases, the level of commitment to that goal increases until a threshold is reached. Beyond that threshold, there is no longer a goal fit for the individual.

The notion of goal fit does not necessarily relate to an individual's commitment (acceptance) of higher goals. Rather, it refers to the subject's commitment to whatever the goal level that is ordained in a particular case. Goal fit may refer to the commitment of the individual to low or moderate goal levels. For that reason, the respondents were divided into subgroups of goal commitment and goal level.

A visual examination of a plot of the goal level-goal commitment relationship supports the idea that higher levels of goal difficulty are related to higher levels of goal commitment (see Figure 4.3). The scatterplot is generated

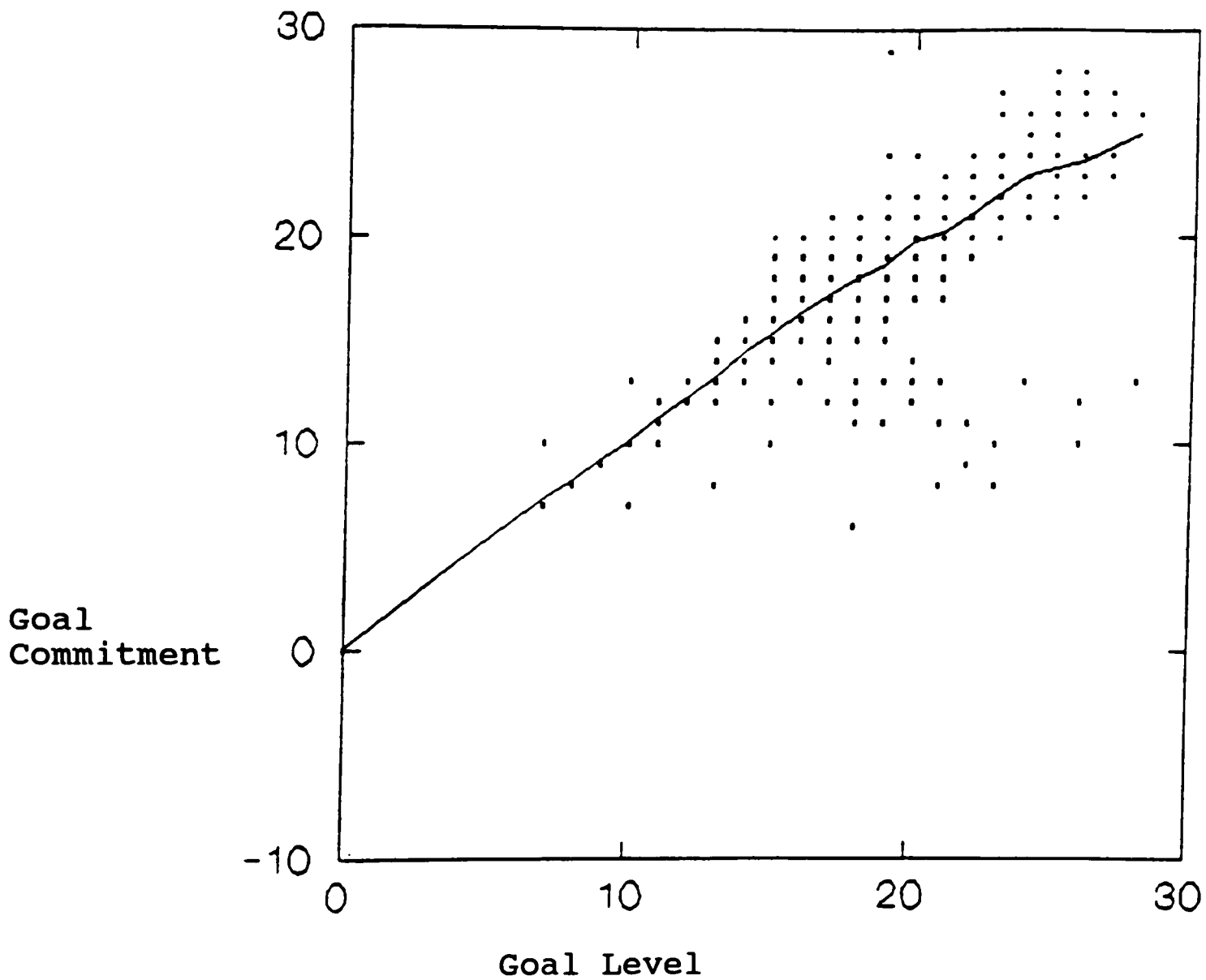

Figure 4.3 Scatterplot of the Goal Level-Goal Commitment Relationship (LOWESS smoothing method)

using the SYGRAPH software using a LOWESS (a robust locally weighted regression and smoothing scatterplot) smoothing method (Cleveland [1979], [1981]). This method produces a smoothed curve by taking independent values of GL and predicting values of the dependent factor GC from a weighted average of nearby dependent values. The tightness of the smoothed curve is determined by a tension parameter (F), which determines the width of the smoothing window.

Figure 4.4 is a presentation of another smoothed scatterplot using the DWLS (distance weighted least squares) option of the SYGRAPH software. Once again, the tension parameter determines the width of the smoothing window, but unlike the LOWESS option, DWLS fits a line through a set of points by least squares. This method produces a locally weighted curve running through the points using a McLain [1974] algorithm.

An inspection of the plots supports the notion that goal commitment is positively related to goal level, particularly for low and intermediate values of goal level. Furthermore, there is some indication that for higher values of goal level, the nature of the relationship is changing. Although there are too few values of goal level at the higher ranges for a statistically significant indication of the nature of the relationship between GL and GC, a visual inspection of the curve suggests weak support for a flattening of the curve or a possible downturn. This

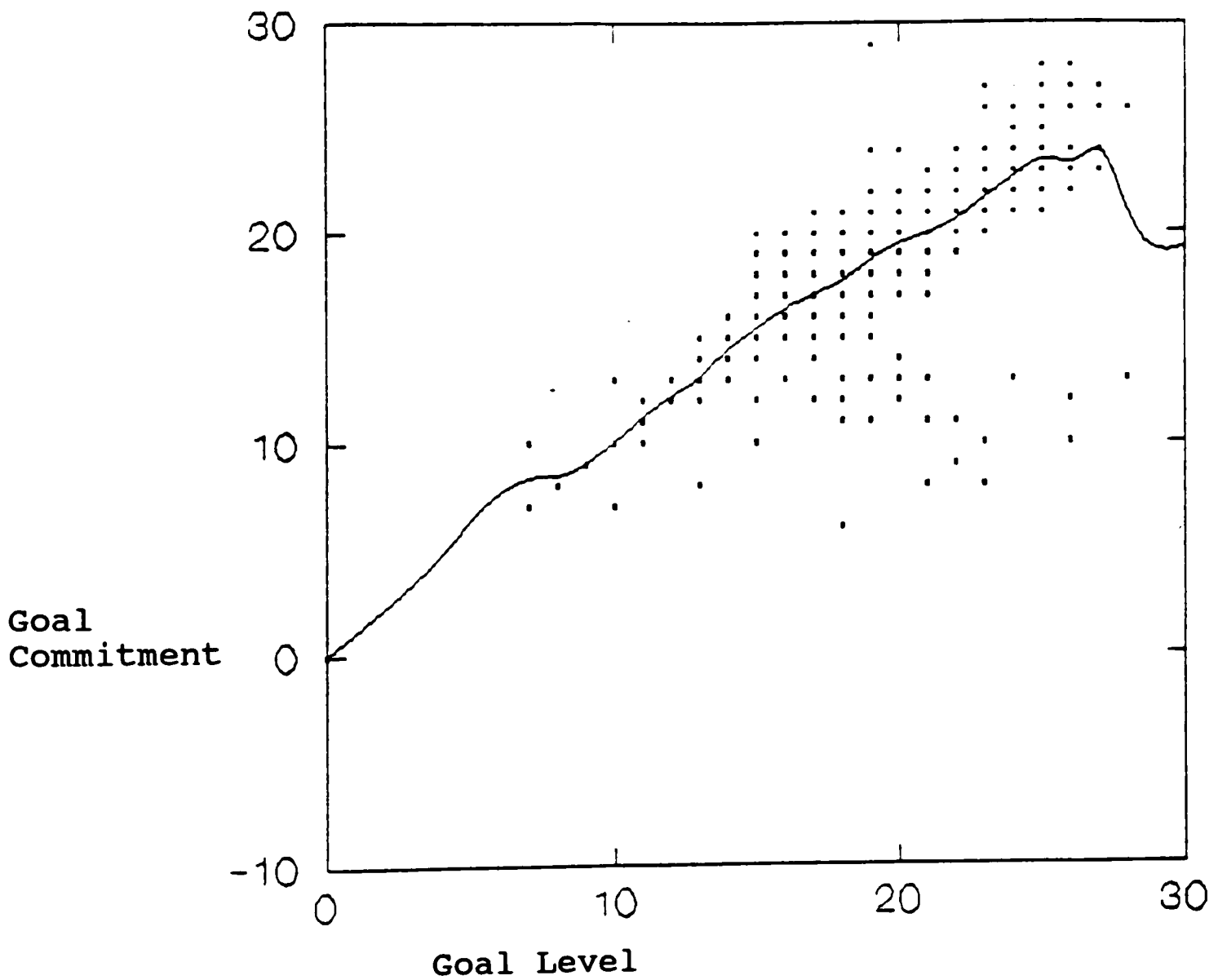

Figure 4.4 Scatterplot of the Goal Level-Goal Commitment Relationship (DWLS smoothing method)

finding is consistent with an inverted U-shaped relationship between goal level and goal commitment supporting Erez and Zidon [1984] results, where they concluded performance and goal level is positively related only through a threshold level of goal difficulty.

Summary of Hypotheses Tested

The moderated multiple regression (MMR) analysis indicated some support for a moderating influence for goal commitment in the goal level-motivation linkage (hypothesis 3). The MMR analysis for TRK as a moderator in the motivation-performance linkage was not supported indicating that TRK is a predictor variable (hypothesis 6).

The path analysis results indicate support for the hypothesized positive relationship between participation and goal level (hypothesis 1) and a positive relationship between commitment and motivation (not hypothesized). Not supported by the data are the hypothesized relationships between motivation and performance (hypothesis 2), between goal level and goal commitment (hypothesis 4), or between goal level and motivation (hypothesis 5).

CHAPTER V

SUMMARY AND CONCLUSIONS

In the previous chapter, the research model was tested using multiple regression and path analytic techniques following a four-step approach. The measurement model was refined using factor analysis. The nature of the hypothesized moderating relationships was tested using moderated multiple regression analysis. A structural model was examined using path analysis. Finally, the ancillary relationships among three of the antecedent variables (motivation, goal commitment, and goal level) in the overall theoretical model were investigated.

The purpose of this chapter is: (1) to discuss a summary of the results and conclusions; (2) to discuss implications of the results; (3) to acknowledge limitations of the research; and (4) to present recommendations for future research.

Summary of the Findings and Implications

The purpose of this research study was to improve understanding of the behavioral factors, goal level (GL), goal commitment (GC), and motivation (MOT) and the task relevant knowledge (TRK) factor, which were hypothesized to influence the linkage between budgetary participation and job performance. The first research objective was to develop a measure for TRK. The relationships among the

constructs were presented in two research objectives to: (1) determine the effects of task relevant knowledge, goal commitment, goal level, and motivation on the link between participative budgeting and job performance; and (2) measure the relationship between motivation and performance as it is affected by TRK. The discussion of the results are presented in the order of the stated objectives.

Research Objective One

The first research objective was to develop a measure for task relevant knowledge. Toward that end, questions were devised to elicit responses from the subjects detailing some degree of knowledge they utilize to identify and select proper solution strategies in their specific jobs. Since a survey instrument was used to gather these data, responses may be biased and measure respondents' perceptions as to their self-esteem in specific job-related matters. This may be characterized as task specific self-esteem. To verify that the TRK measure developed here is an actual measure of the individuals' body of knowledge relating to their job tasks would require different testing methods than those utilized and are beyond the scope of this investigation.

However, an alternative approach was attempted to confirm the validity of the measure. Since the individuals participating in the study were certified through a testing procedure addressing their knowledge in the areas of

personal, interpersonal, and administrative skills, correlational analysis of the TRK measures and the scores each received through his or her certification process was performed. This was done in the belief that the TRK measure may be related to the test scores of the individuals. None of the correlations among the TRK measure and the examination scores were significant (.0594, p=0.14, n=610 for personal skills test score; .0367, p=.3649, n=611 for administrative skills test score; -.0010, p=.8061, n=610 for interpersonal skills test score). One possible explanation for this finding is the nature of the test in comparison to the measure developed in this research. For example, the personal, interpersonal and administrative skills tests each consists of sixty questions and address a wide range of skills that are not task specific for any single job. It is likely that the skills addressed in the tests are not used in the specific working environment of the individual respondent in this study. It is not difficult to imagine working situations where an individual will not be called on to use what he or she knows about administrative skills, for instance, if his or her job description does not call for significant administrative duties. For that reason, the questions devised to measure the specific knowledge used in the subject's job may not be correlated to the 180 questions that make up the certification test of the ICPM.

Another possible explanation for the lack of correlation among the test scores and the TRK measure may be the acquisition of the TRK skills after the test was administered to the respondents. This may occur through a learning process on the particular or other similar jobs after certification of the ICPM member. The demographic data suggest that the subjects perceive that approximately 50% of the information they need to know for the successful accomplishment of their jobs comes from previous experience, 7% from professional seminars, 6.2% from professional meetings, and 10.5% from company training programs. In contrast, only 25.1% of their job skills are deemed to be explained by their formal education. This may indicate that the skills brought to bear on the job by these managers may largely be learned through experience or non-formal education while working rather than those acquired before certification.

Research Objective Two

Job performance was considered the primary result in this study. Thus, performance was treated as an endogenous construct that was influenced by several factors. The specific factors in this study were budgetary participation, goal level, goal commitment, motivation, and task relevant knowledge. The relationships of these factors are posited

in research hypotheses 1, 2, 3, 4 and 5 and are restated in Figure 5.1.

The path coefficients and statistics for the full and trimmed path models were presented in Tables 4.6, 4.7, and 4.8. Table 4.9 summarized the effects of the factors in the study. The task relevant knowledge construct is included in the model following the conclusions of the MMR analysis discussed in the previous chapter. Research findings corresponding to each hypothesis tested and a discussion of their implications are presented in the following sections.

Budgetary Participation and Goal Level

Hypothesis 1 (i.e., higher goal levels will be related to higher budgetary participation) was supported (Beta=0.095, p=.0163). This result indicates that higher degrees of budgetary participation may result in higher goal levels. These findings are consistent with previous empirical studies including Latham *et al*. [1978] where they found support for the positive relationship between participation and levels of goal difficulty. The findings of this study are also consistent with those of Cammann [1976] and Merchant [1985], where they found a negative relationship between participation and favorable attitudes toward budgetary slack. The implications of their findings suggest that individuals who participate in the budget-setting process do not tend to incorporate slack in

H_{a1}: Higher levels of budgetary participation are related to higher goal levels.

H_{a2}: Higher levels of motivation are related to higher levels of job performance.

H_{a3}: The relation between goal level and motivation is moderated by the degree of goal commitment.

H_{a4}: Goal level is related to goal commitment.

H_{a5}: Goal level is related to motivation.

H_{a6}: The relation between motivation and job performance is moderated by the level of task relevant knowledge.

Figure 5.1 Research Hypotheses

their budgets and, as a result, set higher goal levels for themselves.

One interpretation of the implication of this finding for managers is that participation by a subordinate in the budgetary process results in higher goal levels than those goal levels that would be set without their participation. This may occur during the process due to the acquisition of local knowledge of the subordinate and/or the personal involvement the subordinate feels because of his or her participation.

Motivation and Job Performance

Hypothesis 2 (i.e., motivation is related to higher levels of job performance) was not supported (Beta=.009, p=.8029). The effects of motivation on job performance were not significant except in the absence of the TRK construct. This result is inconsistent with the findings in Brownell and McInnes [1986], where their results supported a positive relation between motivation and performance. Similar results were found in Hofstede [1968] and Ronen and Livingstone [1975]. Interestingly, as in Brownell and McInnes, the data in this study support their finding of no direct association between participation and motivation and that participation was directly related to performance rather than indirectly though motivation. However, there is an indirect relationship through goal commitment. These

differences in findings may be due to the effects of TRK in this study.

The implication of this finding for managers is that, while no doubt important, motivation by itself is not sufficient for optimal subordinate performance. Without the requisite tools to successfully accomplish specific job tasks, the subordinate, no matter how motivated, may not be able to perform adequately. Sole emphasis or primary emphasis on the motivational aspects of directing the subordinate's actions may not be as effective without a commensurate emphasis on ongoing training of the subordinate. This can be accomplished through the provision of company training programs, professional seminars, or on-going experiential training on the job.

Goal Level and Goal Commitment

Hypothesis 3 (i.e., the relation between goal level and motivation will be moderated by the level of goal commitment) was weakly supported by the MMR analysis. Some support exists for the treatment of goal commitment as an antecedent variable, however. As a result, this factor was included in the path model and it was significant (Beta=.333, $p<.0001$).

The implication of this finding, when taken into consideration with hypotheses 4 and 5, is that a complex association among the three variables exists. Managers must

recognize that some subordinates will positively react to certain levels of goal difficulty through a positive influence on their motivation, while others in the same apparent circumstances may not.

Hypothesis 4 (i.e., goal commitment is related to goal level) was supported (Beta=.075, p=.0394). These results are consistent with results of previous empirical studies including Erez *et al.* [1985] and Erez and Arad [1986]. This finding supports the notion that as the goal difficulty increases through the budgeting process, the individual's commitment to accomplishing that goal increases. The implication of this finding for managers is that a goal determined through the budget-setting process must be sufficiently challenging to the individual subordinate so that he or she will internalize those objectives. The possibility that these goals may not be internalized exists for those cases where goals are perceived to be "too tight," although the true nature of the relationship for those cases is not clear from the findings of this study.

Goal Level and Motivation

Hypothesis 5 (i.e., goal level is related to motivation) was not supported (Beta=.0253, p=.5048). These results suggest that a positive influence on motivation is not dependent on goal difficulty. The implication of this finding for managers is that, irrespective of the goal level

determined through a participative decision-making process, for that participation to positively influence the motivation of the subordinate, there must be individual commitment to that goal.

Research Objective Three

The third research objective was to determine the nature of the relationships among motivation, task relevant knowledge and performance. The relationships of these factors were posited in research hypothesis 6 and restated in Table 5.1. TRK was not hypothesized to predict job performance. Results of the MMR analysis suggest this construct is more appropriately considered a predictor variable. As a result, TRK was included in the path model as an exogenous variable and it was significant (Beta=.2821, $p<.0001$). This result is consistent with theoretical interpretations by Hirst [1987]. In addition, Murray [1990] suggested that TRK may have both intervening and moderating effects on job performance in a similar fashion to the goal commitment effect on the goal level-motivation linkage.

This result suggests that TRK is not most influential in its effect on the association between motivation and performance. Rather, it is a significant factor in predicting the performance of the individual. Thus, we may conclude that irrespective of the differences in the motivation of the individual, variability in job performance

will be more related to varying degrees of task relevant knowledge than to motivation.

Considering the first two research objectives together, the data generally support earlier empirical research that posited that budgetary participation leads to higher goal levels. Results indicate that higher individual goal commitment positively influences the motivation of the individual. In the absence of the TRK measure and based on regression analysis, the motivation construct explains 7% of the variability in job performance. Inclusion of the TRK measure increases the explanatory power of the model to 42% while the motivation construct becomes non-significant.

The job performance constant term was significant and indicates that a high mean level of job performance is shared by all managers sampled. The incremental explanatory power of motivation can explain only a relatively small amount of performance variability for the respondents. This indicates that, while motivation of the subordinate participating in the budgetary process is significant, it is not directly associated with job performance. Alternatively, the inclusion of the TRK measure in the model is also significant in the statistical sense, but may indicate some practical significance as well because of its relatively large increase in explained variability in job performance. Despite any positive motivational effect arising from participation in the decision-making process, a significant

effect on performance seems to be indicated only when the individual possesses the requisite knowledge to identify the proper task solution strategy and subsequently to select that strategy.

Implications

Prior researchers have investigated many of the relationships replicated in this study. Many of those studies investigated relationships between two or among three of the factors included in this study. These prior studies were undertaken in a laboratory environment and their results were not generalizable to the populations of interest in the working environment. This study has attempted to incorporate a number of those factors investigated previously along with a new construct, task relevant knowledge, and include them in a passive observation study across multiple industries in the hope that the results may be generalizable. Much of the results are consistent with empirical and theoretical literature. This is not surprising since the prior research resulted in equivocal results.

While the constructs have been previously investigated, this is the first study that has measured and examined the influence of TRK in the budgetary participation environment. Task relevant knowledge, an important significant factor, has been measured and the results suggest it is an important

factor in the linkage between participation and performance. The findings of this study suggest that there are benefits to be derived from participative budgeting: participation is related to the setting of higher goal levels and higher goal commitment. The primary benefit derived may be a positive influence on the motivation of the individual to attain the goal set through this process. But the more significant benefit may be derived through a combination of participation and acquisition of task relevant knowledge that has a more significant impact on the ultimate performance of the individual.

Limitations

This study employed members of the Institute of Certified Professional Managers as subjects. The membership represents a fairly broad cross-section of managers in some respects, but 264 of the members who responded are employed in the defense/aircraft industry. Generalizing results to managers in all industries may not be defensible.

Nonresponse bias may exist since not all questionnaires were returned, even though the test for nonresponse bias did not indicate significant differences between early and late respondents. Maximizing response rate was an important element of the research. The potential problem of this bias was addressed by attempting to obtain maximum response rates where possible. This was accomplished by designing a cover

letter indicating support from the Institute of Certified Professional Managers and utilizing a second mailing to those respondents who had not responded to the initial mailing after four weeks. As stated earlier, tests were performed to detect differences between early and late responses. Even though no differences were found, it is still possible that nonresponse bias may exist.

Lack of precision in the measurement instrument is always a possibility in survey research. Where possible, the measures employed in this study had been used in previous empirical research with the exception of task relevant knowledge. While the use of previously validated measures does not guarantee reliability and validity, it provides support for their use in this study.

The questions for task relevant knowledge were created for this study. It is possible that these measures represent perceptions of the respondents that were unintended by the researcher. Until, or unless, this measure is used in additional research, the validity of the construct can be questioned. Finally, even with due care, survey research may result in the possibility of measurement error.

Contributions

It has been generally accepted in the organizational behavior, psychology, and accounting literature that there

is a need to examine the behavior of individuals in managerial positions. One of the contributions of this study is the addition to this body of literature by investigating the linkages between participation and performance as they are affected by behavioral and individual knowledge in a passive observational study. Furthermore, the inclusion of the variables GL, GC, MOT, TRK, BP and JP have not previously been tested in a single study, but have been linked by inference.

Job performance has been identified as a construct of interest in empirical studies in many disciplines, and TRK has been theorized to affect this linkage. A research instrument was developed and tested to measure this construct. While Campbell and Gingrich [1986] investigated the cognitive effects of participation on performance in the completion of complex tasks, they did not explicitly examine their effects on TRK.

Future Research

More confirmatory work must be done for the measure of TRK. Perhaps a more direct measure can be developed for comparison purposes to the measure developed in this study. If confirmed, other researchers using survey methods can utilize the measure in studies investigating the relationship between an individual's task identification and selection strategies and other constructs of interest.

The participation-performance linkage was investigated for members of the Institute of Certified Professional Managers. A natural extension of this research would be to investigate the efficacy of the model supported by the data in this study by that of another group. Perhaps a more heterogeneous group of professionals might increase the generalizability of the study.

The theoretical model tested in this study, while partially supported by the data collected, left some questions unanswered. Notably, the exact nature of the relationships among goal level, goal commitment, and the motivation of the individual in a participatory budget-setting process will require more study. In addition, task relevant knowledge was theorized to have a moderating influence in the linkage between participation and performance and the results suggest that TRK, as a predictor variable, may be an important subject for future research.

Most importantly, further research into the validity of the TRK measure is warranted because of the lack of confirmation of this measure in this study. Perhaps a direct test of respondents' job-related knowledge might offer support for the surrogate as measured by the TRK measure developed in this study.

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APPENDIX A

SURVEY QUESTIONS

SURVEY QUESTIONS

I. Budgetary Participation
1. I am allowed a high degree of influence in the determination of my budget goals.
2. I really have little voice in the formulation of my budget goals. (reverse item)
3. The setting of my budget goals is pretty much under my control.
4. My superior usually asks for my opinions and thoughts when determining my budget goals.
5. My budget is not finalized until I am satisfied with it.

II. Budget Goal Difficulty
1. I should not have too much difficulty in reaching my budget goals.
2. They appear to be fairly easy.
3. My budget goals are quite difficult to attain.
4. My budget goals require a great deal of effort from me to achieve them.
5. It takes a high degree of skill and know-how on my part to attain fully my budget goals.
6. In general, how would you characterize the budgetary goals of your unit?
_____too loose; ____fairly loose; _____just right; ____tight but attainable; ____too tight.

III Goal Commitment
1. It wouldn't take much to make me abandon the budget goal. (reverse item)
2. I am willing to put forth a great deal of effort to attain the budget goals.
3. How hard will you try to reach the budget goal?
4. How commited are you to the budget goal?
5. How determined are you to attain the budget goal?
6. To what extent will you strive to attain the budget goal?

IV. Motivation (Intrinsic)
1. I feel a great sense of personal satisfaction when I do my job well.
2. Doing my job well increases my feeling of self-esteem.
3. I feel bad when I do my job poorly.

V. Task Relevant Knowledge
1. When discussing the budget, my supervisor suggests specific actions I might take to accomplish my goals.

2. I am encouraged to discuss actions necessary for the successful accomplishment of my budgeted objectives.

3. When discussing the budget, no mention is made of specific actions I might take to accomplish my goals. (reverse item)
4. My superior assumes I know what actions are required to successfully accomplish my budgeted objectives.
5. My educational background has prepared me to accomplish my objectives on this job.
6. Specific job-related actions I might take in the accomplishment of my objectives are discussed during the budget-setting process.
7. Employees I have hired have performed adequately.
8. Specific job-related actions I might take in the accomplishment of my objectives are rarely discussed before the budget-setting process. (reverse item)
9. Specific job-related actions I might take in the accomplishment of my objectives are discussed after the budget-setting process.
10. Experience at this job has prepared me to accomplish my objectives on this job.
11. During the budget-setting process, I ask my superior for suggestions that may help me accomplish my budgeted objectives.
12. My experience on other similar jobs has prepared me to accomplish my objectives on this job.
13. I am not successful in getting my share of company resources to meet my department's needs. (reverse item)
14. My supervisor is likely to suggest actions I might take in the successful accomplishment of my objectives at any time.
15. I get along well with other department managers with whom I must deal.
16. Employees I have trained have performed adequately.
17. During the budget-setting process, my superior assumes I will take the necessary actions to successfully accomplish my objectives.
18. I do not have the same technical knowledge as my subordinates. (reverse item)
19. I employ the department's resources to the best advantage of my company.
20. My subordinates are motivated to accomplish their objectives.
21. I have difficulty coordinating my department's activities with those of other departments in the company. (reverse item)

22. I am gaining the knowledge necessary to eventually fill my supervisor's position.
23. I know how to plan my department's activities.
24. I know where to get help with problems that come up in my department's operations.
25. I don't know how to change my department's activities when necessary. (reverse item)
26. I am frequently unable to determine how well my subordinates are performing their jobs. (reverse item)
27. I know what my subordinates must do to accomplish their jobs.

VI. Job Performance

1. How often do you meet your budgeted goals?
2. How would you rate the cost efficiency of your unit (department)?
3. How would you rate your overall job performance?

APPENDIX B

SURVEY INSTRUMENT AND

COVER LETTER

SURVEY OF CERTIFIED MANAGERS

Circle the number that best represents your opinion.

		Strongly Agree						Strongly Disagree
1.	I am allowed a high degree of influence in the determination of my budget goals	1	2	3	4	5	6	7
2.	When discussing the budget, my supervisor suggests specific action I might take to accomplish my goals.	1	2	3	4	5	6	7
3.	I am encouraged to discuss actions necessary for the successful accomplishment of my budgeted objectives.	1	2	3	4	5	6	7
4.	I effectively have little voice in the formulation of my budget goals.	1	2	3	4	5	6	7
5.	When discussing the budget, no mention is made of specific action I might take to accomplish my goals.	1	2	3	4	5	6	7
6.	My superior assumes I know what actions are required to successfully accomplish my budgeted objectives.	1	2	3	4	5	6	7
7.	The setting of my budget goals is pretty much under my control.	1	2	3	4	5	6	7
8.	My educational background has prepared me to accomplish my objectives on this job.	1	2	3	4	5	6	7
9.	Specific job-related actions I might take in the accomplishment of my objectives are discussed during the budget-setting process.	1	2	3	4	5	6	7
10.	Employees I have hired have performed adequately.	1	2	3	4	5	6	7
11.	My superior usually asks for my opinions and thoughts when determining my budget goals.	1	2	3	4	5	6	7
12.	Specific job-related actions I might take in the accomplishment of my objectives are rarely discussed before the budget is to be determined.	1	2	3	4	5	6	7
13.	My budget is not finalized until I am satisfied with it.	1	2	3	4	5	6	7
14.	I feel a great sense of personal satisfaction when I do my job well.	1	2	3	4	5	6	7
15.	Specific job-related actions I might take in the accomplishment of my objectives are discussed after the budget has been determined.	1	2	3	4	5	6	7
16.	Experience at this job has prepared me to accomplish my objectives on this job.	1	2	3	4	5	6	7
17.	During the budget-setting process, I ask my supervisor for suggestions that may help me accomplish my budgeted objectives.	1	2	3	4	5	6	7

		Strongly Agree						Strongly Disagree
18.	My experience on other similar jobs has prepared me to accomplish my objectives on this job.	1	2	3	4	5	6	7
19.	I am not successful in getting my share of company resources to meet my department's needs.	1	2	3	4	5	6	7
20.	It wouldn't take much to make me abandon the budget goal.	1	2	3	4	5	6	7
21.	My supervisor is likely to suggest actions I might take in the successful accomplishment of my objectives at any time.	1	2	3	4	5	6	7
22.	I get along well with other department managers with whom I must deal.	1	2	3	4	5	6	7
23.	Employees I have trained have performed adequately.	1	2	3	4	5	6	7
24.	During the budget-setting process, my superior assumes I will take the necessary actions to successfully accomplish my objectives.	1	2	3	4	5	6	7
25.	I do not have the same technical knowledge as my subordinates.	1	2	3	4	5	6	7
26.	I am willing to put forth a great deal of effort to attain the budget goal.	1	2	3	4	5	6	7
27.	I employ the department's resources to the best advantage of my company.	1	2	3	4	5	6	7
28.	My subordinates are motivated to accomplish their objectives.	1	2	3	4	5	6	7
29.	Doing my job well increases my feeling of self-esteem.	1	2	3	4	5	6	7
30.	I have difficulty coordinating my department's activities with those of other departments in the company.	1	2	3	4	5	6	7
31.	I am gaining the knowledge necessary to eventually fill my supervisor's position.	1	2	3	4	5	6	7
32.	I feel bad when I do my job poorly.	1	2	3	4	5	6	7
33.	I know how to plan my department's activities.	1	2	3	4	5	6	7
34.	I know where to get help with problems that come up in my department's operations.	1	2	3	4	5	6	7
35.	I don't know how to change my department's activities when necessary.	1	2	3	4	5	6	7
36.	I am frequently unable to determine how well my subordinates are performing their jobs.	1	2	3	4	5	6	7
37.	I know what my subordinates must do to accomplish their jobs.	1	2	3	4	5	6	7

		Try Very Hard						Not Try Very Hard
1.	How hard will you try to reach the budget goal?	1	2	3	4	5	6	7

		Almost Always						Almost Never
1.	How often do you meet your budgeted goals?.	1	2	3	4	5	6	7

		Very Good						Very Poor
1.	How would you rate the cost efficiency of your unit (department)?	1	2	3	4	5	6	7
2.	How would you rate your overall job performance?.	1	2	3	4	5	6	7

		Strongly Agree				Strongly Disagree
1.	I should not have too much difficulty in reaching my budget goals.	1	2	3	4	5
2.	My budget goals appear to be fairly easy.	1	2	3	4	5
3.	My budget goals are not difficult to attain.	1	2	3	4	5
4.	My budget goals do not require a great deal of effort from me to achieve them.	1	2	3	4	5
5.	It takes a high degree of skill and know-how on my part to attain fully my budget goals.	1	2	3	4	5
6.	In general, how would you characterize the budgetary goals of your unit?	___too loose; ___fairly loose; ___just right ___tight but attainable; ____too tight				

		Extremely						Not At All
1.	How commited are you to the budget goal?	1	2	3	4	5	6	7
2.	How determined are you to attain the budget goal?	1	2	3	4	5	6	7

		A Great Deal						Not At All
1.	To what extent will you strive to attain the budget goal?	1	2	3	4	5	6	7

1. What percentage of what you need to know has come from the following:
   ____ Formal education
   ____ Seminars
   ____ Professional meetings
   ____ Company training programs
   ____ Experience

2. What percentage of what you need to know did you learn:

   ____ In the last 5 years ____ 5-10 years ago ____ 10-20 years ago ____ more than 20 years ago.

3. What number of professional journals do you receive on a regular basis? ____ none ____ 1 or 2 ____ 3 or 4 ____ 5 or more

4. How many days in the past year did you spend at seminars (or professional meetings or training programs)?
   ____ 0 to 10 days ____ 11 to 20 days

   ____ 21 to 30 days ____ more than 31 days

---

1. What is your current job title? _____

2. In what industry do you currently work? _____

3. How long, in years, have you been employed in your current firm? _____

4. How long have you held your current job title with your current firm? _____

5. How many total years of managerial experience have you had? _____

6. How many firms have you worked for in your working career? _____

7. How many managers (including yourself) are there in your current firm? _____

8. What was your highest attained level of education?

   High school ___ Some college ___ College degree ___ Graduate degree ___

9. What is your (a) Age? _____ (b) Gender? _____

10. Would you, as a member of the ICPM, be willing to take part in an ethics survey within the next six months? Yes ___ No ___

SURVEY OF CERTIFIED MANAGERS

April 14, 1992

Name~
Address~
Address1~
City~

Dear Name~:

A participatory management philosophy is employed by many organizations for the purpose of enhancing employee performance and satisfaction with their jobs. I, with the support of the Institute of Certified Managers, am working on a research project that will identify important factors which organizations feel promote or hinder individual performance in this environment.

Your perceptions regarding these relationships are vital to the success of this study. Please take 15-20 minutes and complete the enclosed questionnaire, and then mail it in the business reply envelope provided. Your responses are completely confidential and will never be divulged to anyone. The data gathered will only be used in aggregate statistical analysis as in other opinion surveys. If you have any questions, please call 806-742-1988.

I appreciate your time and cooperation and look forward to receiving the completed questionnaire. A summary of the results will be mailed to you if you enclose a business card.

Sincerely,

Benson Wier, CPA
Doctoral Candidate

APPENDIX C

SECOND MAILING COVER LETTER

May 14, 1992

name~
address~
address1~
city~

Dear name1~:

Recently I mailed a questionnaire to you seeking your perceptions on various factors you encounter in your working environment. If you have already returned the questionnaire to me, let me thank you for your help. If you have misplaced the original questionnaire, let me ask you once again to take 15 minutes to answer the questions I am posing to you in your capacity as members of the Institute of Certified Managers. This study, supported by the ICPM, is important in advancing the understanding of the motivation of individuals in organizations. Please help me in bringing this project to a succesful conclusion. If you have any questions, please call me at (806) 742-1988.

Sincerely,

Ben Wier

APPENDIX D

COMMITTEE FOR THE PROTECTION OF HUMAN SUBJECTS APPROVAL

TEXAS TECH UNIVERSITY
Office of Research Services

203 Holden Hall
Lubbock, Texas 79409-1035
(806) 742-3884/FAX (806) 742-3892

March 9, 1992

Dr. Don Finn
BA
Campus

Dear Don:

The Texas Tech University Committee for the Protection of Human Subjects has approved your project, "The Effects of Task Relevant Knowledge, Goal Level, Goal Commitment, and Motivation on the Participation-Performance Linkage: An Empirical Examination." Your approval will extend for one year from March 9, 1992. You will be reminded of the pending expiration one month before your approval expires so that you may request an extension if you wish.

The best of luck on your project.

Sincerely,

James Smith
Chairperson
Human Subjects Use Committee

JS/jmd