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**A laboratory study of the impact of self-esteem, methods
of payment, and choice of self-set goals on personal goals,
productivity, and satisfaction using expectancy theory as an
explanatory mechanism**

Moussa, Faten Mohammed, Ph.D.

City University of New York, 1990

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A LABORATORY STUDY OF THE IMPACT OF SELF-ESTEEM, METHODS OF
PAYMENT, AND CHOICE OF SELF-SET GOALS ON PERSONAL
GOALS, PRODUCTIVITY, AND SATISFACTION USING
EXPECTANCY THEORY AS AN EXPLANATORY
MECHANISM

BY

FATEN M. MOUSSA

A dissertation submitted to the Graduate Faculty in
Business in partial fulfillment of the requirements for the
degree of Doctor of Philosophy, the City University of New
York.

1990

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This manuscript has been read and accepted for the Graduate Faculty in Business in satisfaction of the dissertation requirement for the degree of Doctor of Philosophy.

Aug 22 1990

Date

Orly Ben-Yoav

Professor Orly Ben-Yoav Nobel
Chair of Examining Committee

August 23, 1990

Date

Ronald Vredenburg

Professor Donald Vredenburg
Executive Officer

Sidney Lirtzman

Mark Berenson

Saroj Parasuraman

Supervisory Committee

The City University of New York

ABSTRACT

A LABORATORY STUDY OF THE IMPACT OF SELF-ESTEEM, METHODS OF
PAYMENT, AND CHOICE OF SELF-SET GOALS ON EMPLOYEES'
PERSONAL GOALS, PRODUCTIVITY, AND SATISFACTION
USING EXPECTANCY THEORY AS AN
EXPLANATORY MECHANISM

by

Faten M. Moussa

Advisor: Professor Orly Ben-yoav Nobel

This study was designed to examine the factors and the mechanism by which monetary incentives influence goal choice, productivity and satisfaction. This study hypothesized that the highest level of personal goals, productivity and satisfaction is expected for high self-esteem subjects who are exposed to situations in which hard self-set goals are emphasized and in which monetary incentives are applied.

The mechanism of influence was explained by applying expectancy theory to goal-setting effects. Expectancy theory suggests that the choice of self-selected personal goals is a function of: 1. perceived expectancy of goal attainment; and 2. perceived valences of outcomes that are associated with goal attainment.

A two by four multifactorial experimental design was

applied with two levels of methods of payment (piece-rate vs hourly-flat rate plans) and four types of choice of self-set goals (hard, easy, free-choice, and no goals) with one covariant (self-esteem). The sample for the study, whose desirable size of 184 was calculated by Cohen's (1977) procedures, was undergraduate Baruch College/CUNY students. The data were analyzed using Keppel's (1982) procedures for testing the interaction and simple effects and by using Fisher's Z procedures for testing significant differences between correlations. A number of statistical techniques were applied such as MANOVA, ANOVA, simple effects, contrast analysis, multiple range tests (Tukey HSD and Scheffe tests), and Pearson correlation.

The research hypotheses were not supported with respect to personal goals and productivity. Personal goal levels were found to be affected (in the expected direction) by self-esteem and types of choice of self-set goals. In addition, personal goal difficulty was found to be affected (in the expected direction) by task specific self-esteem and methods of payment.

Regarding productivity, a significant two-way interaction between types of choice of self-set goals and methods of payment was found. Piece-rate plans influenced productivity (in the expected direction) in the easy- and free-choice goal conditions rather than in the difficult- and no-goal conditions.

In addition, the research hypothesis regarding satisfaction was partially supported. A significant three-way interaction among task-specific self-esteem, methods of payment, and types of choice of self-set goals was found and the result was in the expected direction for high task specific self-esteem subjects only.

Regarding the mechanism of influence, the expectancy theory variables (perceived expectancy and valences of job performance) were able to partially account for the results obtained by this research.

Theoretical and practical implications of the research findings were discussed.

Acknowledgments

This research was difficult both conceptually and methodologically. Conceptually, it was multidimensional and complex since the relationships among its variables were jointly, rather than separately, studied. Methodologically, at some point in time I had lost hope that such research could be practically possible to complete. Getting the students to do the experiments was not easy. In addition, collecting the data with a sample size of 184 students (in addition to 16 subjects in the pretest) took long periods of time (extending over nine months) and extensive effort, especially since subjects were randomly and individually assigned to the experimental conditions. Each subject took almost two hours to do all the work. Although everything was written down in the questionnaire, the questionnaire was long and the order of administering the experimental manipulations, the scale measurements, the task to be performed, and the productivity data to be given to the student was very crucial so even small mistakes could not be tolerated. Accordingly, this research was very expensive in terms of time, effort, and financial costs (two thousands dollars were spent to pay subjects for their participation). However, because researchers are the truth seekers, they strive to contribute to the advancement of science and to

real world organizations. It was this that made this research rewarding and stimulating experience.

Because of the scope, complexity, and the methodological difficulty of this research, it would not have been done without the generosity of those who contributed to its conceptual clarity, methodological feasibility, implementation, and completion. My sincere thanks and my deep appreciation go out to all of them. However, above all, I am very grateful and thankful to God for giving me the health, the will, and the means that made this research possible.

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My heartfelt thanks goes to my daughter Areeg and my son Mohammed for their love, forbearance, and understanding while I was involved in this research and throughout the years of my study for the Ph.D.

Finally, I would like to acknowledge a special person in my life--my husband Ismail Barakat--who greatly contributed, not only to the completion of this research but also to the many beautiful meanings in my life that have helped me go on and face many challenges. Not only has he read and corrected this dissertation many times throughout all the revisions, but he also has shared many of this research's ideas with me, and has offered some valuable comments and creative suggestions. It was my husband's true love, endearing support, and extraordinary sacrifices that made this dissertation a reality. One, full of pride not only for me but also for my husband who was always there when I needed him. As a token of my gratitude, and in appreciation of his extraordinary character and quality, I dedicate this dissertation to him.

Faten Moussa

September 1990

To my husband Ismail
For love, support, and sacrifices

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CHAPTER 1

INTRODUCTION

Blue collar pay-incentive plans have been a topic of great controversy and debate over the last half century. Their pros and cons have been of major concern, not only to the field of organizational behavior, but also to the fields of management and labor, as well.

Most of the controversy is focused on the true contribution of pay-incentive plans in increasing motivation and performance, on what factors influence their effectiveness, and on how they affect and modify human behavior in industry.

The major thesis of this research is that the confusion and ambiguity surrounding the effectiveness of pay incentives result originally from faults in the theoretical background of these plans, not in the quality of their application (the empirical ground), contrary to the claim made by researchers in the field.

This confusion, however, has been accelerated as a result of a misguided trend in research that overemphasized the situational paradigm, and underemphasized the individual-difference paradigm. This is not surprising since the originators of the incentive theory emphasized that people are motivated by money, and money alone; therefore, it follows that the more you pay them, the

harder they are going to work. As a consequence, the individual-differences variables have been ignored, underemphasized, and have received little attention, relative to the situational variables.

This research is an attempt to challenge the incentive theory assumptions that the primary determinants of behavior are situational. It suggests that, in order to solve the controversy over the effectiveness of pay-incentive plans, researchers should shift their focus from emphasizing only situational constraints, to studying personality characteristics as well.

Prior to explaining the arguments of this research, a definition of pay-incentive plans will be provided, as well as a brief review of the theoretical background of these plans.

Defining blue collar pay-incentive plans

Pay-incentive plans refer to the system in which

the earnings of a worker, or a group of workers, are directly, promptly, and automatically related to his output by a predetermined formula relating his actual performance to a specific standard of performance (Wolf, 1957; p. 5).

Blue-collar-pay-incentive plans differ from hourly-flat-rate plans in that under the hourly-flat-rate plans an individual is paid according to his/her daywork, regardless of productivity.

While there are many kinds of blue-collar-pay-

incentive plans that have been used in application (see Lytle, 1942), this research focuses on a straight-piece-rate plan which involves paying a worker a basic rate for all units produced from zero and up, i.e., workers earnings equal rate per piece multiplied by the number of pieces produced. The straight-piece-rate plan is chosen because it is the easiest and most understandable plan by workers when compared to other incentive plans (Lawler, 1971; Lytle, 1942), it is applied in most research concerning pay-incentive plans, and it is considered one of the strongest plans in generating motivation because of its clarity, and generosity relative to other incentive plans. However, in spite of these advantages, the design of piece-rate plans, including the straight-piece-rate plan, is not structured to force an individual to set difficult goals (Locke, Bryan, & Kendall, 1968). This disadvantage, therefore, is the focus of this research as will be explained later.

The theoretical background of pay-incentive plans

The motivational aspects of pay-incentive plans have been emphasized in many theories, such as scientific management (1900-1930), expectancy theory (1964), and goal theory (1968).

Scientific management emphasizes the importance of monetary incentives to increase workers' performance, and

to eliminate waste. It is assumed that man works for money, and money alone--a typical view of the "economic man" theory which indicates that man works to maximize his gain and to minimize his loss.

Expectancy theory, by Vroom (1964), indicates that the force over the individual to act is a monotonically increasing function of the algebraic sum of the products of the valences of different levels of performance and his/her expectancies that his/her behavior will result in attaining these outcomes. The complete model by Vroom contains three basic constructs: expectancy (effort-performance probability), instrumentality (performance-rewards probability), and valence (attractiveness of the rewards that are contingent on high performance).

Locke (1968) argues that the change in the value of incentives can only have an effect on behavior as long as this change is coupled with a change in the individual's goal, i.e., goal and intention mediate the effect of incentives on behavior.

Several researchers (Deci, 1975; Herzberg, Mausner, & Snyderman, 1975; Maslow, 1954; & Mayo, 1927-1932) have offered different perspectives that have shattered the image of the economic man theory. Mayo argues that social satisfaction is a more important determinant of work behavior than the economic factor. Maslow (1954) argues that man has a more complex set of needs than financial

needs. Herzberg et al.(1975) argue that money is a "hygiene factor," not a motivator, and Deci (1975) argues that monetary incentive plans should be avoided because they reduce the intrinsic motivation of the task.

While these theorists have challenged the importance of financial incentives as a motivator, their work is not supported by empirical evidence. Carey (1967) shows that the conclusion of the Hawthorne studies, by Mayo and others, is little supported by the evidence. In addition, Hall and Nougaim (1968), and Lawler and Suttle (1972) do not support the hierarchy-of-needs assumption of Maslow. Moreover, some researchers (e.g., Ewen, Smith, Hulin, & Locke, 1966; House & Wigdor, 1967; Whitest & Winslow, 1976) do not support the concept of "satisfiers" and "dissatisfiers" (proposed by Herzberg, 1975) in which job satisfaction variables operate. Furthermore, while Deci's (1975) arguments received support from Pritchard, Campbell, and Campbell (1977), it is noted that Cherrington (1973) found that rewarded subjects reported greater satisfaction with the task, than non-rewarded subjects.

In sum, the idea that pay is not a prime motivator is not supported. Opsahl and Dunnette (1966) argue that "few would disagree that money has been and continues to be the primary means of rewarding and modifying human behavior in industry."

The failure of the pay-incentive plans

While the review of the literature indicates that pay incentive reduces unit production cost (Bloomfield, 1923; Cole, 1928; Loudon & Deegan, 1959; Lytle, 1942; McManis & Dick, 1973; Tayler, 1911; Wolf, 1957), improves employees' behavior and performance (Farr, Vance, & McIntyre, 1977, 1976; Herman, DeMontes, Domfnquez, Montes, & Hopkins, 1973; Lawler, 1987; London & Oldham, 1977; Roethlisberger & Dickson, 1939; Rothe, 1951, 1978; Rothe & Nye, 1958, 1959; Scott, Farh, & Podsakoff, 1988; Vecchio, 1982; Viteles, 1953; Wagner, Rubin, & Callahan, 1988), and increases employees' satisfaction (Cherrington, 1973; Lawler, 1971), research also indicates that the incentive system leads to negative outcomes such as increased unit production cost (Roy, 1952), restricted output (Hickson, 1961; Roy, 1952; Viteles, 1953; Whyte, 1955; Wolf, 1957; Yetton, 1979), reduced satisfaction (Schwab & Wallace, 1974), and reduced intrinsic motivation (Deci, 1973; Pritchard, Campbell, & Campbell, 1977).

In short, as concluded by Opsahl and Dunnette (1966), money incentives appear to work sometimes, but not always. In either case, there is a confusion as to why money incentives work in this uncontrolled manner. Part of the problem lies in the fact that the real contribution of pay-incentive plans is not clear because the installation of pay incentives usually is accompanied by changes in work

methods and improvements of work conditions. Some researchers even argue that the increase in workers' performance is due to changes in methods in work and not to the incentives themselves (e.g., Marriott, 1961).

In an attempt to clarify some of the ambiguity surrounding the effectiveness of pay-incentive plans, many researchers claim that these plans are, to a great extent, situationally controlled. For example Collins, Dalton, and Roy (1946) point out that:

Within management circles has been realization from time to time that incentive systems do not always 'work' in terms of production increase. Cases of output lag under incentive pay, however, have been usually attributed to some failure in the application of the incentive system. The assumptions of the standard workman and of economic motivation, being 'scientific', are usually considered not to be subject to re-examination. Since the underlying assumption of incentive pay is that of economic determination, it is not surprising that writers dealing with problems of incentive pay usually examine them in terms of this assumption. The almost universal conclusion has been readjustment of economic and technical aspects of any system will make it workable (p. 12).

As a consequence, much research was done to investigate the situational constraints underlying the application of these plans. The findings of this research indicate that the effectiveness of pay-incentive plans are mediated by goal difficulty (Locke, 1968; Locke, Brian, & Kendall, 1968), and moderated by such factors as reinforcement schedules (Berger, Cummings, & Heneman, 1975; Chung & Vickery, 1976; Latham & Dossette, 1978; Nord, 1969; Pritchard, Leonard, von Berger, & Kirk, 1976; Yukl, Latham,

& Pursell, 1976; Yukl, Wexley, & Seymore, 1972), perception of expectancy (Dachler & Mobley, 1973; Feldman, Reitz, & Hilterman, 1976; Georgopolous, Mahoney, & Jones, 1957; Jorgensen, Dunnette, & Pritchard, 1973; Pritchard & Deleo, 1973; Schwab, 1973, 1974; Schwab & Dyer, 1973; Vroom, 1964), feedback (Campbell, 1952; Chung & Vickery, 1976), participation (Lawler & Hackman, 1969; Schefflen, Lawler, & Hackman, 1971), group size (Marriott, 1949, 1951, 1961), task characteristics (Mangum, 1962; Miller & Hamblin, 1963; Viteles, 1953; Walker & Marriott, 1951; Weinstein & Holzback, 1973), perception of equity (Adams, 1963a,b; Adams & Jacobson, 1964; Adams & Rosenbaum, 1962; Garland, 1973; Goodman & Friedman, 1969), human relations (i.e., union-management relations) (Daumback, 1956; Kennedy, 1946; Roy, 1952; Whyte, 1955; Wolf, 1957), and group relations (Sayles, 1954).

Unfortunately, all these studies added little to the understanding of money incentives. According to Opsahl and Dunnette (1966), we know little about how money interacts with other factors, or how it acts individually to affect job behavior. Tolchinsky and King (1980) point out that this conclusion, arrived at several years ago by Opsahl and Dunnette, still applies to the study of monetary effects on human behavior.

Some researchers (e.g., Arvey, 1972; Blumenthal et al., 1980; Farr et al., 1977; Graen, 1969; Lawler, 1970;

Lawler & O'Gara, 1967; Mawhinney, 1979; Opsahl & Dunnette, 1966; Schneider & Olson, 1970; Schwab, 1973; Tolchinsky & King, 1980; Vecchio, 1982, 1981) have emphasized the importance of individual differences as another moderator of the effectiveness of pay- incentive plans. However, only few studies, as compared to the number of studies examining situational factors, were done to investigate the role of individual differences in determining the effectiveness of pay-incentive plans. These studies include Dalton's (1948) rate busters and rate restrictors, Atkinson and Reitman's (1956) need for achievement vs need for affiliation, Lawler and O'Gara's (1968) need for money, CPI scales, and equity, Vecchio's (1981) morale maturity in overpayment piece-rate situations, Blumenthal et al.'s (1980), and Manuck and Garland's (1979) types of personality: type A vs type B. The major conclusion derived from those studies is that personality characteristics, under certain conditions, could increase the effectiveness of pay-incentive plans.

Contrary to the claim made by other researchers, it is the researcher's view that the failure of the pay-incentive plans is mainly related to certain weaknesses built within these plans themselves, i.e., the plans have mostly suffered from faults in their design and principles rather than from faults in their application. The present research focuses on one of the weaknesses in the design of

these plans--the problem of goal difficulty. This problem is especially relevant to the application of the piece-rate system. The following is a brief clarification of this design problem.

The problem of piece-rate system regarding goal difficulty (the research problem)

Locke (1968) argues that a difficult goal produces a higher level of performance than an easy, or "do your best" goal. He argues, further, that goals and intentions should mediate the effect of incentives on behavior. That is, a change in the value of incentives will not produce change in performance level unless this change is coupled with change in the goal level.

Piece-rate systems, in particular, have been found to generate low goal difficulty on the part of the individual because these plans do not emphasize task, i.e., they do not require the individual to reach a certain level of performance to get the incentive rate (Locke et al., 1968; Lytle, 1942). On the contrary, these plans pay incentives for each unit produced, from zero and up. Locke et al. (1968) found that assigned goals under bonus plans were more effective (i.e., lead to higher productivity) than self-set goals under piece-rate plans. This is because the piece-rate system allows an individual to set his/her own goal, and reward him/herself for every unit produced,

while the bonus system requires a specific level of performance before he/she is paid anything. Hence, piece-rate plans call for a self-set goal, rather than an assigned goal. According to Locke et al. (1968), a self-set goal is less effective than an assigned goal because people have the tendency to set themselves relatively easy goals (Locke et al., 1968).

Since a piece-rate system, by design, is not structured to force the individual to set a difficult goal, it is extremely important that the organization urge workers to set difficult goals for themselves as a way to increase the effectiveness of the piece-rate plans. However, emphasizing hard self-set goals under piece-rate plans will not be effective if workers lack the confidence and belief that they can achieve those goals. Research indicates that people who have high self-esteem are more likely to set, and attain, hard goals, than people with low self-esteem (e.g., Hall, 1971; Korman, 1970). This effect of high-self-esteem is explained by Lawler (1973) who indicates that the higher the self-esteem, the higher the perceived probability that high effort leads to goal attainment (i.e., expectancy). In addition, according to the expectancy theory by Vroom (1964), everything being equal, the higher the expectancy, the higher the motivation.

Moreover, applying the expectancy theory to goal-

setting situations suggests that setting hard goals is not only a function of perceived expectancy of reaching those goals, but it is also a function of perceived valences of goal attainment (an individual's belief that attainment of hard goals will lead to positively valued rewards).

Accordingly, under the piece-rate plans in which hard-self-set goals are emphasized, the high-self-perceived ability that characterizes high-self-esteem individuals would suggest that they will be able to earn more money (since they will set higher goals and work harder to achieve those goals) than low-self-esteem subjects. To the extent that money is a valued job outcome, high-self-esteem individuals should have higher perception of valences of goal attainment than low-self-esteem individuals.

High-self-esteem individuals are also more likely to derive satisfaction from their high performance, especially if they are performing under the incentive system that maximizes their self-competency (Korman, 1976, 1970) and reward them for achieving hard self-set goals than low self-esteem individuals.

From this review, it is clear that the interactive effects of certain personality and situational variables are crucial to the effectiveness of piece-rate plans regarding self-set (personal) goals, productivity, and satisfaction. Those variables are: (1) choice of self-set goals; (2) self-esteem; and (3) the mechanism by

which the interactive effect of choice of self-set goals, self-esteem, and piece-rate plans is taking place.

This research focuses on these variables.

Accordingly, a laboratory study was designed to test for manipulating (and controlling for) the effect of piece-rate plans, choice of self-set goals, and self-esteem (as measured by self-reports) on personal goals, productivity, and satisfaction, as well as the mechanism by which this effect takes place.

Purposes

The purposes of this research are twofold:

1. To test the impact of the interaction among self-esteem, methods of payment (i.e., piece-rate plans vs hourly-flat-rate plans), and types of choice of self-set goals (i.e., hard goals vs easy goals vs free-choice goals vs no goals) on personal goals, productivity, and satisfaction.
2. To explain the mechanism by which the above interaction is taking place. That is, the explanation of the effect of this interaction on the dependent variables is in its influence on some cognitive mediating concepts suggested by the expectancy theory, namely, perceived expectancy and perceived valences of job performance (or of goal attainment).

Significance of the research

Some of the contributions of this research are as follows:

First, this research examines the thesis that the problem of incentive-pay plans is mainly a problem of principles and design, and not a problem of the quality of the application as has previously been the thought in the literature. Since Vroom (1964) argues that motivation is a function of the interaction between the individual and the situation, and since improving the situation alone can no longer solve the controversy over the effectiveness of pay-incentive plans, the researcher argues that examining the interaction between personality characteristics and pay-incentive plan situations is necessary in order to overcome the weaknesses that are inherent and built into their design and principles. The present research focuses on one of these design problems, namely the lack of task goal under the piece-rate plans.

Second, by focusing on the interaction between personality characteristics and situational variables influencing personal goal choice, productivity, and satisfaction, this research will shed light on one of the major, and most neglected, problems in the field of organizational behavior, namely the lack of an interactive approach to research. Pervin (1968) has argued that

psychologists have emphasized the need for that approach, but have neither developed a theory of personality, nor a theory of the processes affecting that interaction. In addition, Chatman (1989) points out that:

in order for researchers to understand and predict behavior, they must consider both person and situation factors and how these factors interact. Even though organization researchers have developed interactional models, many have overemphasized either person or situation components, and most have failed to consider the effects that persons have on situations (p. 333).

The impact of the interaction among self-esteem, types of choice of self-set goals, and methods of payment on personal goals, productivity, and satisfaction is expected to be significant for the following reasons:

A. While ample research has been done to investigate the impact of incentives--and/or goal difficulty--on performance (e.g. Chung & Vickery, 1976; Early, Connolly, & Ekegren, 1989; Huber & Neal, 1986; Latham, Mitchell, & Dossett, 1978; Latham & Yukl, 1975; Locke, 1968; Locke et al., 1968; London & Oldham, 1976; Pritchard, Jones, Roth, Stuebing, & Ekeberg, 1989, 1988; Terborg, 1976; Terborg & Miller, 1978), very little research has been done to investigate the personality and situational factors that influence an individual's choice of goal difficulty level.

Factors influencing an individual's choice of a difficult goal are important, both from a theoretical and practical viewpoint (Campbell, 1982). From a theoretical view point, Steers and Porter (1974) point out that a

greater understanding of the goal effects on behavior can only be achieved through investigating the situational and personality factors that influence goal setting. From a practical viewpoint, Campbell (1982) points out that "the choice of goal difficulty level is intimately bound up with the goal-setting effect. To the extent that an individual chooses a difficult goal, a supervisor or manager can expect increased job performance" (p. 89).

B: While much research has been done to investigate the effects of assigned goals on behavior (e.g., Chung & Vickery, 1976; Early, Connolly, & Ekegren, 1989; Latham, Michelle, & Dossett, 1978; Latham & Yukl, 1975; Locke, 1968; Locke et al., 1968; London & Oldham, 1976), very little research has been done to investigate the effects of self-set goals (e.g., Carroll & Tosi, 1970; Locke et al., 1968; Roberson, 1989; Terborg, 1976). For example Roberson (1989) points out that:

Personal self-selected goals are believed to be an important determinant of behavior in organizational settings. [However] data on the extent to which employees do consciously set goals for their job and the influence of these goals on work behavior have not been collected (P. 346).

Studying a self-set goal is important because greater understanding of the process of goal setting (Austin, 1989), greater commitment to the goal (Erez & Arad, 1986; Erez, Early, & Hulin, 1985; Latham & Yukl, 1975; Riedel, Nebeker, & Cooper, 1988), greater attainment of the goal (Austin, 1989), and greater understanding of the factors

that influence goal setting (Locke, Shaw, Saari, & Latham, 1981) are accomplished when the goal is self-set, rather than when the goal is assigned.

C. While ample research has been done to investigate the relationship between monetary incentives--and/or goal difficulty--and performance, little research has been done to investigate the effects of monetary incentives--and/or goal difficulty--on satisfaction. The research evidence suggests that the relationship between monetary incentives and satisfaction is controversial, and between goal difficulty and satisfaction is either unknown, or negative. This research suggests that a greater understanding of these relationships may be accomplished when the effects of hard-self-set goals and self-esteem are taken into consideration, as will be clarified in Chapter 2.

Third, this research offers an explanation to the mechanism (i.e., perceived expectancy of effort-performance relationship, and perceived valences of job performance) by which the interaction among self-esteem, types of choice of self-set goals, and methods of payment is taking place. Riedel et al. (1988) point out that examining the process of goal choice is essential to understanding how monetary incentives affect behavior. This research, therefore, is an attempt to integrate monetary incentives, goal difficulty, and the expectancy theory variables, taking into consideration the effect of

personality characteristics.

This research, therefore, has a multidimensional contribution which will be of significance to management, concerning the area of money incentives. Opsahl and Dunnette (1966), and Tolchinsky and King (1980) argue that there is less solid research in the area of monetary incentives than in any other field related to work performance which is surprising considering the significant role of money in American society.

Chapter 2 will review the relevant theoretical and empirical literature related to the research framework. Chapter 3 will present the research hypotheses and their rationale, Chapter 4 will discuss the research methods and experimental design, and chapter 5 will present the research findings. Finally, Chapter 6 will discuss the research findings and their implications, as well as limitations of the study.

CHAPTER 2

THE RESEARCH FRAMEWORK

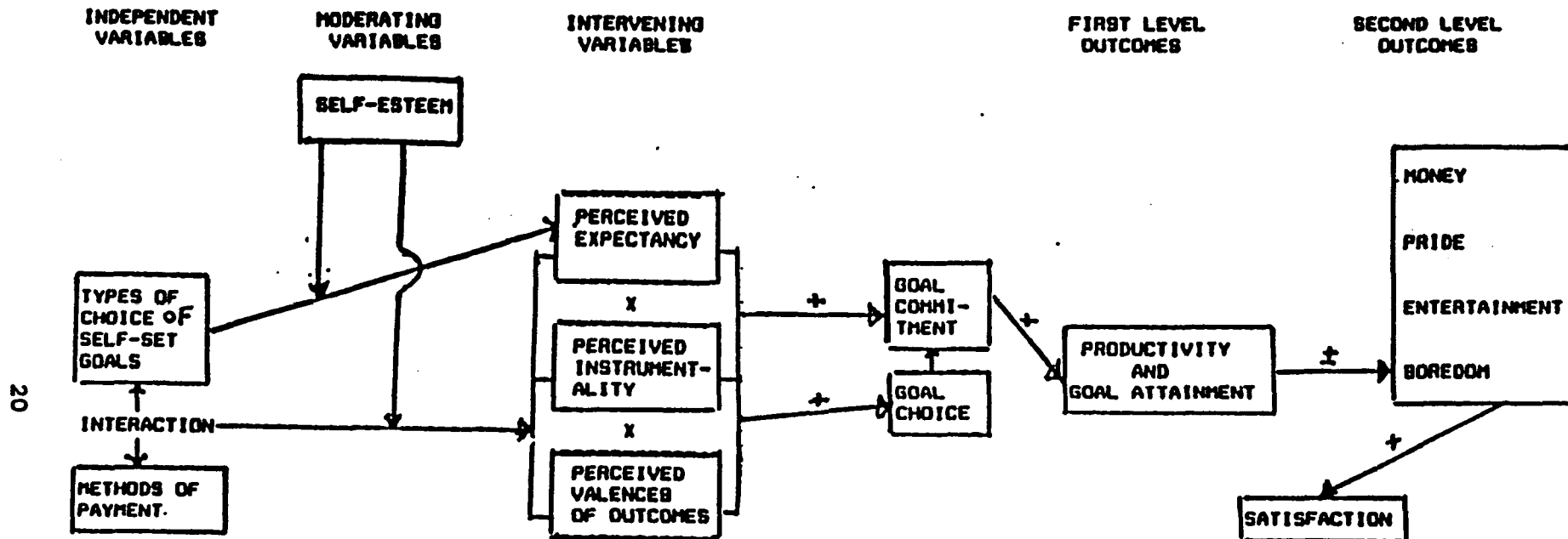
This chapter presents the theoretical framework upon which this study is based. Figure 1 shows the research variables and their relationships.

The idea behind Figure 1 is derived directly from expectancy theory, by Vroom (1964), which indicates that motivation is a function of the interaction between a person and his/her environment.

In the following pages, variables included in the research framework are defined, relationships between the variables as specified in Figure 1 are discussed.

A. Goal difficulty/monetary incentive-performance relationship

While the positive relationship between goal difficulty and performance is supported by research (e.g., Chung & Vickery, 1976; Early, Connolly, & Ekegren, 1989; Huber, 1985; Huber & Neal, 1986; Latham & Marshall, 1982; Locke, 1982; Locke et al., 1968; Locke, Frederick, Lee, & Bobko, 1984; Matsui, Okada, & Mizuguchi, 1981; Pritchard, Jones, Roth, Stuebing, & Ekeberg, 1988; 1989; Riedel et al., 1988; Shalley & Oldham, 1985; Terborg & Miller, 1978), the relationship between goal difficulty and monetary incentives remains an area of great controversy and



.FIGURE 1. RESEARCH FRAMEWORK

debate.

On the one hand, Locke (1968) argues that incentives function to make an individual more committed, more willing to accept a task goal, and more persistent in his/her effort. Locke et al. (1968) found that monetary incentives did influence goal or intention level. In addition, through a complex series of experiments, Locke et al. (1968) found support for the notion that goals mediate the effects of incentive on performance. They found that goals and intentions positively influenced performance even when the effects of monetary incentives were controlled, while monetary incentives were unrelated to performance when goals and intentions were controlled. Moreover, Huber (1985) also found that performance of the assigned-goal-goal-contingent-incentive group was superior to all other groups (i.e., no-goal and participative-goal conditions). Furthermore, Riedel et al. (1988) found that goal difficulty, goal commitment, and propensity to set a performance goal were significantly higher for the monetary incentive groups than for the nonincentive groups.

On the other hand, several researchers (e.g., Chung & Vickery, 1976; Latham, Mitchelle, & Dossett, 1978; London & Oldham, 1976; Pritchard & Curtis, 1973; Terborg, 1976; Terborg & Miller, 1978) found that methods of payment and goal difficulty independently affect performance. Miner (1980) and Pritchard and Curtis (1973) argue that the

result obtained by Locke et al. (1968) is related to the fact that Locke et al. (1968) offered subjects too little money as an incentive which weakens its effect to act as an independent psychological force.

Several conclusions can therefore be reached:

First, the role played by the joint impact of money and goal on performance is not clear at all and is controversial. Second, most of the above research has focused extensively on the relationship between monetary incentives/goal difficulty and performance, rather than on how a particular goal level is determined.

Third, most of the above studies that show that methods of payment and goal difficulty act independently in influencing performance have focused on assigned goals rather than self-set goals. Assigned goals are effective only to the extent that subjects accept the goal (Locke, 1968). Unfortunately, goal acceptance was not studied by the above research, which might partially clarify why the above research has failed to demonstrate the interactive effect between goal and incentives supported by Locke et al. (1968). Fourth, most of the above studies have failed to take into consideration personality and situational variables that influence behavior under the application of monetary incentives and goal setting.

The present research, therefore, is an attempt to overcome these problems by focusing on the situational and

personality variables that influence personal goals and performance where the goal is self-set. This focus is important, especially under the application of piece-rate plans, in which neither the goal nor the task are identified, and where people have complete control over the choice of their goals.

Accordingly, the major arguments of the present research are: subjects will set higher personal goals (and be higher producers) in situations in which hard-self-set goals are emphasized than in situations in which either easy-self-set goals or free-choice-self-set goals are emphasized. This is consistent with Locke's (1968) goal theory prediction. The effects of hard-self-set goals on personal goals and productivity, however, should be especially stronger under the application of piece-rate plans than under the application of hourly-rate plans because high performance or achievement of hard goals is more rewarding under the former plans than under the latter (see Wright, 1989).

This research, therefore, assumes that methods of payment and types of choice of self-set goals independently and interactively influence personal goals and performance. However, their interactive effect on the above dependent variables is not automatic, and should be a function of other variables such as: 1. self-esteem and 2. the cognitive psychological state concerning the likelihood of

reaching a certain goal level and the desired outcomes that are contingent on reaching that goal.

1. Self-esteem as a moderator of goal difficulty and/or monetary incentive-performance relationship

Many researchers have claimed that personality characteristics should be an integrated part of goal theory to improve its predictive power (e.g., Carroll & Tosi, 1970; Dossett, Latham, & Mitchell, 1979; Motowidlo, Loehr, & Dunnette, 1978; Steers, 1975; Tolchinsky & King, 1980; Weiss & Alder, 1984; Yukl & Latham, 1978). Weiss and Alder (1984) point out that:

...The absence of any integration of personality constructs into the theory [Locke's theory] is surprising since goal setting has its conceptual roots in Lewin's work on level of aspiration. In that original research, the choice of task difficulty levels was seen as partly a reflection of stable personality dispositions (p. 17).

In addition, Steers (1975) points out that:

....Any theory of goal-setting must consider the role played by such individual differences if it is to explain in a comprehensive fashion why or how goal-setting works. In fact, the omission of such a consideration in previous research may explain many of the contradictory results found in the existing literature (p. 393).

Research shows that need for achievement is positively related to goal specificity (Steers, 1975), and to goal difficulty (Dossett et al., 1979; Yukl & Latham, 1978)). In addition, in a field research involving a study of typists, Yukl and Latham (1978) found that externals set

easier goals than internals in participative, but not in assigned goal situations.

However, the most important personality characteristic that should influence goal difficulty is self-esteem. Locke et al. (1981) point out that self-esteem is worthy of further study since it is logical that one's self concepts will affect the goal difficulty level one chooses. This is also consistent with Korman's (1976) thesis which indicates that people are motivated to behave in a manner consistent with their self-concepts.

Self-esteem is defined, according to Coopersmith (1967), as "the extent to which the individual believes the self to be capable, significant, successful and worthy" (p. 5). In addition, Rosenberg (1965) defines self-esteem as "a positive or negative attitude toward a particular object, namely, the self" (p. 31). According to Rosenberg (1965), high self-esteem individuals respect themselves and consider themselves worthy, while low self-esteem individuals consider themselves as unworthy which implies self rejection and self-contempt. Moreover, Korman (1976) defines one's self-esteem as "the extent to which one sees the self as a competent, need satisfying individual" (p. 51).

Korman (1976) identifies three dimensions of self-esteem: (1) Chronic self-esteem (the trait component which is a person's evaluation of him/herself across

situations); (2) task-specific self-esteem (the situational component which is the degree of self-perceived competence in a specific task; and (3) social self-esteem (which is the perception of what is expected by others in the specific situation). Accordingly, the task-specific and social self-esteem differ from chronic self-esteem in the sense that the latter is a generalized and stable trait, while the former are situationally specific and unstable (Hollenbeck & Brief, 1987).

Laboratory research (i.e., Hollenbeck & Brief, 1987) found that under self-set goals, perception of task-specific ability was positively related to the difficulty of the goal chosen. In addition, they found also that, in an assigned goal condition, a positive, goal-difficulty performance relationship is found only for high-self-esteem subjects.

Similarly, field research also shows that goal setting leads to greater performance improvements for employees who have high self-esteem than for those who have low self-esteem (Yukl & Latham, 1978). In addition, in a field study involving word processing operators, by Dossett et al. (1979), it was found that high self-esteem individuals obtained their goals more often than did individuals with low self-esteem when the goal was participatively set and feedback was offered. Moreover, Carroll and Tosi (1970) found that those with high self-assurance try very hard in

response to a difficult goal, whereas those who are low in this trait reduce their effort as the goal becomes more difficult. However, self-esteem was not found to moderate the effect of participative and assigned goal setting on performance (Latham & Yukl, 1976).

The relationships among self-esteem, goal difficulty, and task performance have been explained by Hall (1971). According to Hall (1971), the high self-concepts of high-self-esteem-subjects lead them to adopt more difficult, challenging goals, and to engage in a goal-directed behavior which increases their performance, relative to low-self-esteem subjects. Hall and Foster (1977) found a significant positive relationship between self-esteem and goal difficulty.

From this research evidence it is clear that high-self-esteem subjects are more likely to set hard goals (and to exert higher effort in the face of those goals) than low-self-esteem subjects.

Locke et al. (1981) point out that the best design for studying the individual differences in connection with goal setting is the one that allows a greater amount of goal choice. They criticized previous research that was designed to look for individual difference effects, as follows:

The studies were not specifically designed to look for individual differences effects. The very fact that most studies assigned goals to the subjects means that any individual differences that did exist were

probably masked by the demand characteristics of the design. When goals are assigned, subjects typically respond to situational demands rather than act in accordance with their own styles and preferences. The best design for revealing individual differences would be one in which there is free (or a considerable amount of) goal choice rather than assigned goals. Note that the personality variables in the goal-setting studies reviewed previously were most likely to emerge in the participative conditions (where the subject has some input into the decision) or in the self-set goal conditions [where the subjects has full input into the decision] (p. 142).

Supporting Locke et al.'s (1981) arguments, Yukl and Latham (1978) argue that when employees have substantial influence on goal setting, goal difficulty will be affected by employees' traits and values. Mento, Cartledge, & Locke (1980) found that personal self-set goals were affected by perceived ability among other variables. In addition, Locke, Frederick, Lee, and Bobke (1984) found that self-efficacy affects goal level, task performance, and goal commitment when the goal is self-set, in situations involving task learning.

Limited research has been done to investigate the relationships among self-esteem, monetary reward, and performance. Lawler (1973) and Porter and Lawler (1968) indicate that monetary incentives will have little influence on those who have low self-perceived ability. In addition, Korman (1970) argues that high self-esteem individuals are more likely to be higher performers than low self-esteem individuals especially when pay on a performance-contingency basis is a reflection of an

individual's task competency.

However, some researchers argue that a contingent reward system might not be effective for high self-esteem subjects, as compared to low-self esteem subjects, since high self-esteem subjects might be already functioning at high levels (Hechler & Wiener, 1974; Terborg, Richardson, & Pritchard, 1980). Terborg et al. (1980) found that self-esteem was negatively significantly correlated with quantity of performance under contingent-rewards whereas it was positively significantly correlated with quality of performance under noncontingent rewards. Hechler and Wiener (1974) found that under a low- expected-pay condition, high-self-esteem subjects showed considerably higher quality of work than low-self-esteem subjects, whereas no significant differences in output quality between these groups were found under a high-expected-pay condition. However, they found also that both high-and low-self-esteem subjects produce greater quantity under the high-expected-pay condition than under the low-expected-pay condition (i.e., only the main effect of pay was supported).

The researcher suggests that the relationship between monetary rewards and self-esteem should be reexamined because: (1) It is hard to believe that high-self-esteem individuals will outperform low-self-esteem individuals only under either the low-pay or noncontingent-reward

situations. Locke (1970) pointed out that: while some individuals value task and work hard in the absence of extrinsic rewards (because of intrinsic rewards), "it is unlikely that most individuals could sustain the desire to excel indefinitely in the face of gross injustice in the distribution of extrinsic rewards" (p. 489); and (2) no attempt has been made to integrate a contingent reward system with other motivational systems (such as goal-setting) to increase the intrinsic aspects of the contingent-reward task, so high-self-esteem individuals could find it both extrinsically and intrinsically rewarding.

The researcher suggests, therefore, that emphasizing hard-self-set goals under the application of monetary rewards should enhance the relationship among self-esteem, monetary rewards, and performance. Since high-self-esteem subjects are more likely to set hard goals and to work hard to attain those goals than low-self-esteem subjects, it follows that the introduction of monetary rewards should work more for high self-esteem subjects than for low self-esteem subjects. Therefore, under contingent rewards, both high-and low-self-esteem subjects are expected to set harder personal goals and to work harder under the hard-goal condition than under the easy-and free-choice-goal conditions. However, the strength of the difference in personal goals and productivity across goal conditions

should be stronger for high-self-esteem subjects than for low-self-esteem subjects. This is because high self-esteem subjects will have all the personality and the situational (goal-setting and monetary rewards) reasons--while low-self-esteem subjects will have only some situational (monetary rewards) reasons--to excel. Under noncontingent rewards, however, high-self-esteem subjects should set somewhat harder goals (and be somewhat higher producers) under the hard-goal condition as compared to the easy-or free-choice-goal conditions whereas low-self-esteem subjects should have no significant differences in personal goals and productivity among these conditions. This is because the latter subjects have neither the personality nor the situational reasons to try hard even with the introduction of goal-setting (given the deficiencies of their personality) whereas high-self-esteem subjects will have both the personality and the situational (goal-setting) reasons to excel.

Thus, this research focuses on self-esteem as a moderating variable of the interactive effect of "methods of payment" and "types of choice of self-set goals" on personal goals and performance. That is, this interactive effect on these dependent variables should vary as a function of self-esteem, as clarified above.

Ability and need for money as possible moderating
confounding variables

Ability could be a possible confounding variable that might influence research variables. Locke et al. (1981) emphasized that self-esteem should be carefully distinguished from ability. Ability is defined as the extent to which an individual is able to perform the task, whereas self-esteem, and task specific self-esteem, are defined as the extent to which an individual perceives him/herself as capable of performing the task. Ability, therefore, might influence, for example, the level of personal goal or productivity; such as subjects who are able to do the task might set higher goals or produce greater units than those who are not able to do the task, regardless of their self-esteem level. Accordingly, ability should be controlled for in order to avoid its unexplained variance in the dependent variables of the research.

Need for money could be another possible confounding variable. According to Lewin (1935), the valence of an object is directly related to the intensity of the need. Accordingly, subjects with high need for money, for example, might set higher goals and work harder to obtain the money than those with low need for money. Need for money, therefore, should also be controlled for.

In the "methods" section, the mechanism of controlling

for either ability or need for money is explained.

2. Expectancy theory as an explanatory mechanism of the effects of methods of payment and/or goal difficulty on personal goals and performance

Steers and Porter (1974) argue that "...simple knowledge that goal setting 'works' is insufficient for our understanding of the goal setting processes; we must know how and why it works" (p. 445).

Unfortunately, little is known about the reasons behind, or the processes involved in either the effectiveness of monetary incentive plans, or goal difficulty concepts. Locke and Bryan (1967), in an attempt to explain the goal setting effects, argue that hard goals, as opposed to easy goals, caused the task to be more interesting.

A comprehensive understanding of the role of incentives and goals on performance can be obtained by studying the expectancy theory model. Although many theories of motivation exist, the expectancy theory has been chosen by the researcher to mediate the effects of the interaction of goal conditions and methods of payment on personal goals and performance for the following reasons:

First, it represents a comprehensive approach to work motivation that can incorporate within its framework many individual and situational variables that influence work

motivation.

Second, it could serve as an explanatory mechanism of the effects of monetary incentives and/or goal difficulty on behavior (Riedel et al., 1988; Toro, 1976). For example, Riedel et al. (1988) found that the cognitive components of expectancy theory predict self reported goals and performance.

Third, although the expectancy theory suffers from some conceptual and methodological problems (see Campbell & Pritchard, 1976; Dachler & Mobley, 1973; House, Shapiro, & Wahba, 1974; Korman, 1974; Miner, 1981; Mitchell, 1974; Mitchell & Biglan, 1971; Schwab & Dyer, 1973; Wahba & House, 1974), much research supports the expectancy theory predictions where monetary incentive plans are applied (e.g., Dachler & Mobley, 1973; Georgopolous, Mahony, & Jones, 1957; Jorgenson et al., 1973; Pritchard & Deleo, 1973; Schwab, 1973; Schwab & Dyer, 1973). In addition, Korman (1974) argues that:

The expectancy-value framework has been found to be of value in explaining and understanding the commonly found lack of responsiveness to incentives offered by today's large work organizations. It is suggested that low expectancies and lack of value-oriented behavior have become increasingly the case because their large size, complexity, and pyramidal structure seems to encourage lower expectancies for success, the lower one goes in the organization. (p. 108).

By applying expectancy theory to the goal setting, the question of why a person chooses a difficult goal (or produces a high number of units) can be answered by

addressing the following two issues: (a) perceived expectancy that high effort leads to high performance (or to goal attainment); and (b) perceived valence of job performance (or of goal attainment).

A. Perceived expectancy that high effort leads to high performance (or to goal attainment)

The choice of a difficult goal should be a function of the perceived probability of its attainment (Campbell, 1982). Locke (1968) and Locke et al. (1988) suggest that goal acceptance is a key conceptual factor for the goal setting effects to occur. However, the relationship among expectancy, goal difficulty, and performance has generated much controversy and debate because of the seemingly conflicting propositions of expectancy theory and goal theory regarding the probability of task success.

Vroom (1964) argues that the more the individual expects to reach the goal, the more effort he/she is going to exert to reach that goal; that is, a positive relationship between probability of task success and performance is expected.

On the other hand, Locke (1968) argues that if a person accepts a performance goal, his/her performance is likely to be higher when the goal is hard, than when the goal is easy; that is, a positive relationship between goal difficulty and performance is expected.

Since hard goals are negatively correlated with expectancy of success, a negative relationship between expectancy and performance is expected, which contradicts the prediction of Vroom's expectancy theory (Mento et al, 1980). Several researchers (e.g., Campbell, 1984; Garland, 1984; Matsui, Okada, & Mizuguchi, 1981; Mento et al., 1980) found that goal difficulty is related negatively to expectancy.

Few studies have been done to investigate the relative power of goal theory against expectancy theory regarding the probability of task success (e.g., Campbell, 1974; Dachler & Mobley,, 1973; Garland, 1984; Locke et al., 1964; Matsui, et al., 1981; Mento et al., 1980; Motowidlo, Loehr, & Dunnette, 1978). The results of these studies reveal that, while expectancy variables seem superior to goal variables, there is some potential for possible integration of both theories. Subjective probability of task success seems to be an important variable in acceptance of an assigned goal, but has no effect on performance (see Mento et al., 1980). Locke et al. (1984) explained the reason for the failure of expectancy to show a relationship to performance, as follows:

In previous goal-setting studies, subjects rated their expectancy of reaching only the goal they were assigned. Because the assigned goals differed among subjects, the expectancy ratings of different subjects pertained to different goal levels. Typically the overall correlation of expectancy and performance was slightly negative because people with easy goals (and therefore low performance) had high

expectancies, whereas those with hard goals (and therefore high performance) had low expectancies (p. 248).

Research (i.e., Garland, 1984; Locke et al., 1984) found that at a single performance level (within a goal condition), a positive relationship between expectancy and performance occurred, while across goal conditions, this relationship is either negative, or not significant.

Accordingly, researchers (i.e., Garland, 1984; Locke et al., 1984) claim that the best measure to apply when testing expectancy-performance probability in goal-setting research is to use a measure similar to a self-efficacy scale, suggested by Locke et al. (1984) which is based on Bandura's (1977) definition of this concept. The self-efficacy scale is similar to the typical measure of expectancy (i.e., effort-performance probability); however, it differs from it in that the self-efficacy scale allows subjects to rate their efficacy with respect to each of a number of different levels (i.e., across a range as opposed to a single level) of performance.

Locke et al. (1984) found considerable success of self-efficacy to predict productivity as opposed to the considerable failure of expectancy to show a positive relationship with productivity (see also Locke, Motowidlo, & Bobko, 1986).

In explaining the above result further, Garland (1984) argues that, because of the anchoring effect of goals, a

person assigned a difficult goal may have higher expectancy for any specific level of performance than a person assigned an easier goal. Some research (i.e., Garland, 1984; Locke et al., 1984; Mento et al., 1980; Motowidlo et al., 1978), shows that personality traits enhance the perception of task success and cause the relationship between expectancy and performance to be positive. Mento et al. (1980) and Motowidlo et al. (1978) found that the relationship between probability of success and performance in a task depends on self-perception of ability (subjective expectancy based on personality traits), and on perception of task situation (e.g., objective probability of task success induced by different goal conditions). They found that objective probability of task success is responsible for a curvilinear effect of performance (i.e., maximum performance occurs when the goal level is of moderate difficulty rather than easy or unattainable), whereas trait components are responsible for a direct and monotonic effect. They conclude that objective and subjective probabilities of task success have somewhat different psychological effects on motivation.

Garland (1984) argues that performance should be maximized in situations in which setting a hard goal is coupled with attempts to build high expectancies. Garland (1984) argues that this expectancy could be increased by improving self-efficacy, which is the belief that one can

completely perform a given task. Locke et al. (1984) found a positive relationship between expectancy and self-efficacy. In addition, Hollenbeck and Brief (1987) found that high-task-specific-self-esteem subjects have stronger expectancy of attaining the goal than low-task-specific-self-esteem subjects. Moreover, Eden (1988) suggests a model that considers trait expectancy (a cognition about self-competence, i.e., self-esteem) as antecedent to both state expectancy (a cognition about specific performance) and goal difficulty which, in turn, influence performance.

Accordingly, the researcher proposed that the effects of self-set-goal conditions on perceived expectancy should be a function of self-esteem. For high-self-esteem subjects, as opposed to low-self-esteem subjects, the hard-self-set-goal manipulations should not result in lower expectancy of task success than that from the easy-self-set, free-choice-self-set, or no-goal manipulations. The rationale for that is as follows:

First, high-self-esteem subjects are more likely to cope with stress (Bellenger & Wilcoa, 1987), to believe in their ability to perform a given task, to appreciate the challenge of difficult goals and to exert a higher amount of effort in the face of these goals than low-self-esteem subjects (see Carroll & Tosi, 1970; Hollenbeck & Brief, 1987). Therefore, high-self-esteem subjects should have a higher expectancy of task success than low-self-esteem

subjects (see Hollenbeck & Brief, 1978; Lawler, 1973), and accordingly, high self-esteem subjects, will not be discouraged by the hard-goal manipulation, as compared to low self-esteem subjects.

Second, where the goal is self-set (rather than assigned), an individual's choice of goal level should be a function of his/her expectancy of achieving his/her goal. Campbell (1982) points out that "it is extremely improbable that an individual would choose a goal level which he himself felt was impossible to reach" (p. 80). While both high-and low-self-esteem subjects are expected to set goals consistent with their self-perceived ability, high-self-esteem subjects are more likely to have realistic expectancy (Lawler, 1973) and accordingly, are more able to set realistic goals than low-self-esteem subjects. Therefore a self-set goal is a situation in which the impact of self-esteem on perceived expectancy-goal choice (or perceived expectancy-performance) relationship is maximized.

B. Perceived valences of job performance (or of goal attainment)

Perceived valence of job performance is the anticipated satisfaction of performing at a specific level (Vroom, 1964). It is a function of the multiplication of valence and instrumentality. According to Vroom (1964),

"valence" is the degree of attraction a person assigns to different outcomes that are contingent on performance, while "instrumentality" is the perceived probability that high performance (or goal attainment) will lead to high rewards.

Researchers (e.g., Galbraith & Cummings, 1976; Riedel et al., 1988; Schwab, 1973, Toro, 1976) found that monetary incentives influence pay instrumentality. Accordingly, subjects working under the contingent-payment system should perceive higher instrumentality (that high performance leads to high rewards) than subjects working under the non-contingent payment system. Toro (1976) found that productivity intention under a piece-rate system is significantly higher than productivity intention under an hourly system because perceived instrumentality of performance to rewards was significantly higher under the former system than under the latter.

Instrumentality is also influenced by the degree of goal difficulty. Toro (1976) found that perceived instrumentality of high performance to positive rewards is significantly higher in the hard-goal condition than in the easy- or no-goal condition. In addition, Matsui et al. (1981) found that motivation and valence of goal attainment are higher for the hard-goal than for the easy-goal groups.

Dachler and Mobley (1973), and Mento et al. (1980) argue that valence affects the degree of acceptance of an

assigned goal. For example, Mento et al. (1980) found that the goal is likely to be accepted when the perceived value of its attainment is high, than when the perceived value of its attainment is low.

Yukl and Latham (1978) found that self-esteem and goal instrumentality (the extent to which goals lead to pay increase, promotion, and job security) interact to influence performance. When instrumentality was low, high-self-esteem subjects showed greater performance improvement than subjects with low self-esteem. When self-esteem was low, subjects who perceived high goal instrumentality had greater performance improvement than subjects who perceived low goal instrumentality. The interpretation of this result reveals that high-self-esteem- subjects will work hard without practical reward, while low-self-esteem subjects will not (Locke et al., 1981).

Lied and Pritchard (1976) found no relationship between self-esteem and instrumentality (performance-rewards relationship), however, the reliability of self-esteem scale was very low. In addition, Ford, Walker, and Churchill (1985) found that self-esteem does not influence attractiveness of monetary rewards, although there was a positive relationship between self-esteem and valence for worthwhile accomplishment.

It is clear that the relationship between self-esteem and perceived instrumentality of high performance to

monetary rewards was not tested in a well controlled experiment that examined the effect of a contingent-reward system vs a noncontingent-reward system. Most studies were done in the field and dealt mainly with a pay increase system rather than a contingent-reward system.

The present study claims that the joint effect of both methods of payment and types of choice of self-set goals will influence valences of job performance, which in turn, will influence personal goals and performance.

Accordingly, subjects will set higher goals and be higher producers under the manipulation of hard-self-set goals than under the manipulation of either easy-self-set goals or free-choice-self-set goals, as long as the perceived valences of goal attainment (or of job performance) compensate for the greater difficulty associated with the goal.

Therefore, the strength of the differences in personal goals and productivity should be of similar direction across goal conditions but stronger under the piece-rate plans than under the hourly-rate plans. This is because greater valences of job performance are associated with achieving hard goals under the former (as each unit produced is rewarded) than under the latter, given that money is a valued job outcome.

The effects of "types of choice of self-set goals" and "methods of payment" on personal goals and productivity,

however, should be especially stronger for high-self-esteem subjects than for low-self-esteem subjects since the former are more likely to work hard in the face of challenging goals (and consequently, they should expect higher rewards) than the latter. Georgopoulos et al. (1957) found that under pay-incentive plans, workers who rated themselves highly tended to see a strong relationship between productivity and rewards. To the extent that these rewards are valued job outcomes, then the valences associated with attainment of difficult goals should be greater for high-self-esteem subjects than for low-self-esteem subjects. In addition, the researcher also expects that under the hourly-rate system, high-self-esteem subjects will set somewhat harder goals (and be somewhat higher producers) under the hard-self-set-goal conditions as compared to the other-goal conditions while low-self-esteem subjects will not. This is because, although money is not contingent on high performance under the hourly-rate system, high-self-esteem subjects will have the personality and the situational (i.e., goal-setting) reasons to perform effectively, while low-self-esteem subjects will have neither the personality nor the situational reasons to do so. Accordingly, the valences of intrinsic rewards should be greater for the former subjects than for the latter.

B. Goal difficulty/monetary incentive-satisfaction relationship

While the relationship between monetary incentives and/or goal difficulty and performance has received a great deal of attention, the relationship between either goal difficulty or monetary incentives and satisfaction has been ignored.

Umstot, Bell, and Mitchell (1976) point out that "a conservative weighing of the evidence suggests that goal setting has a strong positive effect on productivity but an unknown effect on job satisfaction (p. 381)." Umstot et al. (1976) supported this conclusion.

However, more recent research (i.e., Jackson & Zedeck, 1982; Shalley and Oldham, 1985) has demonstrated the negative effect of goals on satisfaction and task interest. Jackson and Zedeck (1982) found that satisfaction in both manual and cognitive tasks is adversely affected by goals. They found that satisfaction is highest in the do-your-best group; it is slightly lower in the no-goal group, lower still in the easy-goal group, and finally, much lower in the difficult-goal group.

In addition, Shalley and Oldham (1985) show that most of the subjects assigned difficult goals show a relatively low level of intrinsic motivation (as measured by the time subjects spent on the task). Phillips and Freedman (1988)

point out that the presence of an externally mediated goal can result in a negative task interest because it highlights the sense of external control and compliance since it induces subjects to perform at some desired level, thereby, having the potential to reduce personal control. According to the cognitive evaluation theory by Deci (1975), task interest is a positive function of personal control.

Arvey, Dewhirst, and Boling (1976), and Pearson (1987) found that goal clarity and participation in goal setting increase satisfaction. In addition, Earley and Kanfer (1985) found that goal satisfaction is highest for subjects given an opportunity to choose their goals and that those exposed to a high performing role model had higher satisfaction than those exposed to a low performing role model.

Few researches (e.g., Bandura & Carvone, 1986; Hamner & Harnett, 1974; Locke et al., 1970; London & Oldham, 1976; Shalley & Oldham, 1985) show that satisfaction is higher when subjects performances exceed the goal than when they do not exceed it.

Lawler (1987, 1981, 1971) and Porter and Lawler (1968) argues that individuals paid according to their performance should be more satisfied than individuals paid according to their daywork. Some researchers (e.g., Cherrington, 1973; Cherrington, Reitz, & Scott, 1971; Fossum, 1979; Jacobs &

Solomon, 1977; Schneider & Olson, 1970; Scott & Cherrington, 1974; Yukl et al., 1972) have shown that monetary rewards lead to satisfaction.

However, several studies (e.g., Baired & Hamner, 1979; Berger & Schwab, 1980; Farr, 1976; Fossum, 1979; Pritchard, 1973; Schwab, 1974; Schwab & Wallace 1974) found that individuals paid according to their performance are less satisfied than individuals paid by daywork.

In addition, Deci (1975, 1973) argues that monetary incentives reduce the intrinsic satisfaction of the task. According to Deci, the introduction of a contingent pay system changes subjects' perceived locus of causality from attributing task performance to intrinsic factors such as task competence to attributing task performance to receiving the contingent pay (the extrinsic rewards). Some researchers (e.g., Cherrington, 1973; Farr, 1977, 1976; Scott, et al., 1988) do not support Deci's argument. For example, Scott, Farh, & Podsakoff (1988) point out, based on the result of their study, that:

There is little reason to believe that the design and implementation of a more effective extrinsic reinforcement schedule will destroy one's pride in one's work, the intrinsic worth or meaningfulness of the job, or one's predilection to perform it. On the contrary, there is every reason to believe that all of those behaviors, both respondent and operant will be facilitated (p. 425).

In an attempt to explain how rewards influence satisfaction, Porter and Lawler (1968) proposed that high performers under the application of monetary rewards should

experience greater satisfaction than their counterparts under the application of nonmonetary rewards because the former should receive greater amount of money than the latter. In other words, the contingent reward system is effective in increasing satisfaction only to the extent that people will try hard under this system. Extrinsic rewards, therefore, should mediate the effect of performance on satisfaction. Several research (e.g., Cherrington, 1973; Cherrington, et al., 1971; Jacobs & Solomon, 1977; Scott & Cherrington, 1974) have supported the Porter and Lawler satisfaction model. For example, Cherrington et al. (1971) found a significant positive correlation between satisfaction and productivity for appropriately reinforced subjects (rewarded high performers and non-rewarded low performers) and a significant negative correlation between satisfaction and productivity for inappropriately rewarded subjects (rewarded low performers and non-rewarded high performers).

The Porter and Lawler satisfaction model is similar to Vroom's (1964) expectancy model; for example, Vroom points out that:

Differences in job satisfaction could, in large part, be explained in terms of the amount of different outcomes provided by the work role and by the valence of these outcomes for the worker. Thus to the extent to which a worker desires an outcome, his job satisfaction will be increased by increases in the amount of the outcome he receives from his job (p. 262-263).

Accordingly, the effects of incentives on satisfaction

can also be explained by the expectancy theory variables (i.e., perceived valence of job performance).

Some researchers show that self-perceived ability, self-esteem or self-efficacy should be positively related to satisfaction (Bandura & Schunk, 1981; Ford, Walker, & Churchill, 1985; Locke et al., 1970). A person high in self-esteem should attach greater importance to, and receive more intrinsic satisfaction from good job performance than a person low in self-esteem (Ford et al., 1985). This is similar to Korman's (1976) self-consistency theory. Korman predicts that only high-self-esteem subjects will show a significant positive correlation between performance and satisfaction. This is because high-self-esteem subjects will engage in effective performance (i.e., behave in a manner consistent with their self-image), while low-self-esteem subjects will not. This prediction is supported by several researchers (e.g., Burke, Hunt, & Bickford, 1985; Greenhaus & Badin, 1974; Inkson, 1978; Lopez, 1982; Jacobs & Solomon, 1977; Korman, 1976, 1970; Siegel & Bowen, 1971; Somers & Lefkowitz, 1983). However, some research has also offered no support to this prediction (Dipboye, Zultowski, Dewhirst, & Arvey, 1979; Tharenou & Harker, 1984). In addition, Howell, Bellenger, and Wilcox (1987) found that self-esteem is not related to job satisfaction. The inconsistency of the results of these studies is due, in part, to different

measures of self-esteem being used which make the comparison among these studies impossible.

From this review, it is clear that: (1) assigned goals have a positive influence on productivity, but no (or negative) influence on satisfaction; (2) the relationship between either monetary incentives or self-esteem and satisfaction is both not clear and inconsistent; and (3) no attempt has been made to integrate the effects of self-esteem, monetary incentives, and goal difficulty in explaining satisfaction. Some researchers (e.g., Bhagat, 1982; Schwab & Cummings, 1970) argue that studying individual and situational factors is important to understand a complex construct like satisfaction.

The present study, therefore, focuses on the interactive effects of monetary incentives, types of choice of self-set goals, and self-esteem on satisfaction. The effects of hard goal manipulations on satisfaction are expected to be positive because of applying self-set goals. Previous studies (e.g., Deci, 1975; Arvey et al., 1976; Earley & Kanfer, 1985; Pearson, 1987) have demonstrated a positive relationship between participation in goal setting and satisfaction.

Accordingly, the present research expects satisfaction to be higher under hard-self-set-goal conditions than under easy- or free-choice self-set-goal conditions. This is because the former conditions provide the highest intrinsic

rewards relative to the latter. The effect of hard-self-set goals on satisfaction should be especially stronger under the piece-rate plans (as each unit produced is rewarded) than under the hourly-rate plans. However, the strength of the differences in satisfaction across self-set-goal conditions under the piece-rate plans should be especially stronger for high-self-esteem individuals than for low-self-esteem individuals because the former are more likely to try very hard in the face of challenging goals, and consequently, earn more money than the latter, given that money is a valued job outcome. Under the hourly plans, however, high self-esteem subjects, as opposed to low-self-esteem subjects, will have somewhat higher satisfaction under the hard-goal condition than under the other-goal conditions because the former subjects will derive some valued intrinsic rewards from achieving hard goals (and consequently have higher satisfaction) than the latter.

The dependent variables and their relationships

The dependent variables in Figure 1 are personal goals, productivity, goal attainment, and satisfaction. Personal goals are the goals chosen by subjects as a result of manipulating different types of goal choice. Productivity is the number of units produced. Goal attainment is how well an individual achieves his/her goal.

It is the discrepancy between the targeted goal (in terms of production units that an individual aspires to produce) and the actual productivity that he/she obtains.

Satisfaction is an individual affective orientation toward the work, overall job, pay, and methods of payment.

Figure 1 implies a linear and positive relationship between personal goal and productivity (or goal attainment), i.e., the higher the personal goal, the higher the productivity (or goal attainment). Locke, Cartledge, and Knerr (1970) indicate that the most immediate, direct motivational determinant of task performance is the individual's goal or intention. Locke (1966) found, from three experiments, a significant linear relationship between level of goal and level of performance. This result is also supported by Locke et al. (1968).

Research (e.g., Hollenbeck, William, & Klein, 1989; Hollenbeck & Klein, 1987; Locke, Latham, & Erez, 1988) has also shown that the relationship between goal and performance is not automatic; that is, it is influenced by goal commitment. For example, Locke et al. (1988) point out that "it is virtually axiomatic that if there is no commitment to goals, then goal setting does not work" (p. 23). Goal commitment is "a determination to try for a goal" (Locke et al., 1981; p. 143).

Hollenbeck and Klein (1987) argue that the expectancy theory variables, that is, perceived expectancy and

valences of goal attainment could explain commitment to the goal. The expectancy theory variables are viewed as antecedents to goal commitment. Huber and Neale (1986), and Mento et al. (1980) found that perceived probability of task success influences goal commitment. In addition, Mento et al. (1980), and Yukl and Latham (1978) found that goal instrumentality and valences influence goal commitment. Locke et al. (1968) argue that monetary incentives increase subjects' commitment to the goal, and Locke et al. (1981) argue that acceptance of a hard goal will be higher for those with high self-efficacy than those with low self-efficacy.

In reviewing the research concerning goal commitment, several comments are worth noting:

(1) Although Locke (1968) viewed goal commitment as a necessary condition for goal setting to operate, goal commitment has been completely ignored in the majority of the studies.

(2) Research that has examined goal commitment effects on goal setting have had difficulty showing the effect of goal commitment on performance (e.g., Huber & Neal, 1986; Locke et al., 1984; London & Oldham, 1976; Mento et al., 1980; Yukl & Latham, 1978). Locke et al. (1981) claims that the lack of a relationship between goal commitment and performance in these studies is due to: (a) an inadequate measure of goal commitment being used; and

(b) a limited range of scores in goal commitment measure; that is, nearly all subjects demonstrated complete commitment to the goal.

Goal commitment is, in Figure 1, an intervening variable in personal goal-productivity relationship, consistent with Locke's (1968) conceptualization of it as a necessary condition for the effects of goal difficulty to occur.

Figure 1 implies also a positive relationship between productivity and satisfaction mediated by the desired amount of intrinsic and extrinsic rewards that are contingent on high performance, consistent with the expectancy and Porter and Lawler's (1968) satisfaction models.

In the next chapter the research hypotheses, as well as their rationale will be explained.

CHAPTER 3

THE RESEARCH HYPOTHESES

In this chapter, the research hypotheses regarding the impact of methods of payment, self-esteem, and types of choice of self-set goals on personal goals, productivity, and satisfaction are going to be introduced.

The primary focus of this research is on the interactive effects of these variables in influencing the dependent variables, rather than on the main effect of each one of them alone.

According to Keppel (1982), an interaction occurs when the effect of one independent variable--on the dependent variable--changes (or is not the same) at different levels of the second independent variable.

This chapter will be divided into two essential parts: The first part will deal with the impact of the above interaction on the dependent variables, whereas the second part will deal with the mechanism by which that interaction takes place.

The impact of the interaction among methods of payment, types of choice of self-set-goals, and self-esteem on personal goals, productivity, goal attainment, and satisfaction

Hypothesis 1

A three-way interaction among methods of payment, self-set-goal conditions, and levels of self-esteem in influencing personal goal is expected with the following components:

- A: With high self-esteem, self-set-goal conditions will interact with methods of payment in determining personal goals such that:
 - A1: Under the application of piece-rate plans, the manipulation of a hard-self-set-goal condition will result in especially higher personal goals compared with the personal goals set under the manipulation of either easy-self-set-goal condition, or free-choice-self-set-goal condition.
 - A2: Under the application of hourly-flat-rate plans, the manipulation of a hard-self-set-goal condition will result in slightly higher personal goals compared with the personal goals set under the manipulation of either easy-self-set-goal condition, or free-choice-self-set-goal condition.
- B: With low self-esteem, self-set-goal conditions will interact with methods of payment in determining personal goals such that:
 - B1: Under the application of piece-rate plans, the manipulation of a hard-self-set-goal condition will result in slightly higher personal goals compared with the personal goals set under the manipulation of either easy-self-set-goal condition, or free-choice-self-set-goal condition.

B2: Under the application of hourly-flat-rate plans, there will be no significant differences in personal goals set under the manipulation of hard, easy, or free-choice self-set-goal conditions.

Hypothesis 1 is diagrammed in Figures 2a and 2b.

The rationale for Hypothesis 1 follows from the notion that hard goals, as compared to easy goals, should result in intention to try hard (Berhm et al., 1983; Early et al., 1989; Huber, 1985; Huber & Neal 1986; Locke, 1968; Locke et al., 1968; Locke et al., 1970; Locke et al., 1981; Locke et al., 1984). According to Locke et al. (1984), "goals lead subjects to direct their actions in line with goal requirements, to expend effort in proportion to goal difficulty, and/or to persist in a given task until the goal is reached (p. 241)." Therefore, a task with a hard goal is more challenging than the same task with an easy goal (Locke & Bryan, 1967; Locke & Latham, 1984; Yukl & Latham, 1978). Hard goal is the intention to try hard, it requires subject to set challenging, but attainable, goals. Easy goal is the intention to try very little, while free-choice goal is the intention to perform on the average since subjects are expected to set goals that would be neither extremely difficult, nor extremely easy.

This effect of hard goals on intention should be especially stronger under the application of piece-rate plans than under the application of hourly-flat-rate plans because under the former plans each unit produced is

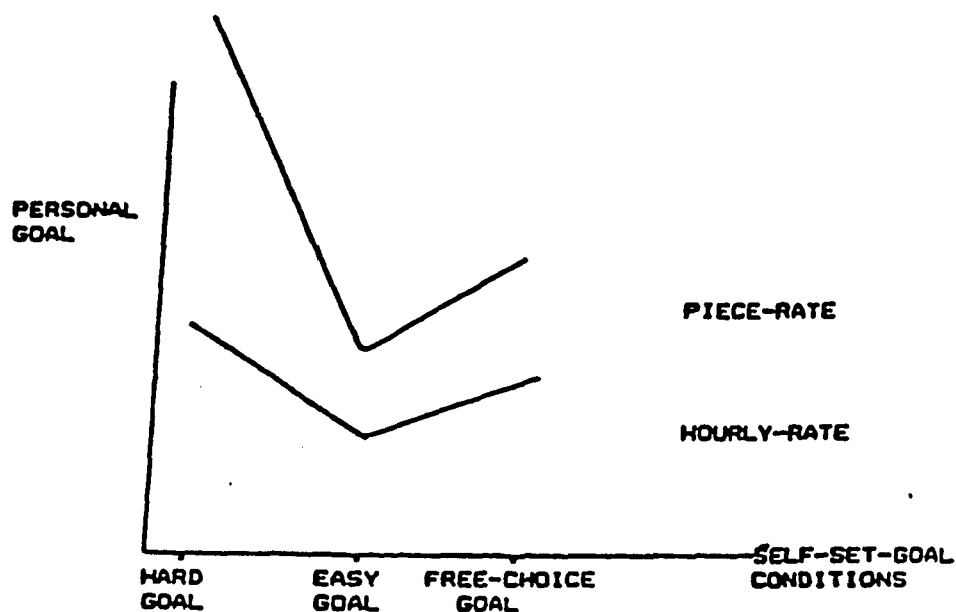


Figure 2A. The hypothesized impact of the interaction between methods of payment and self-set-goal conditions on personal goal for high-self-esteem subjects

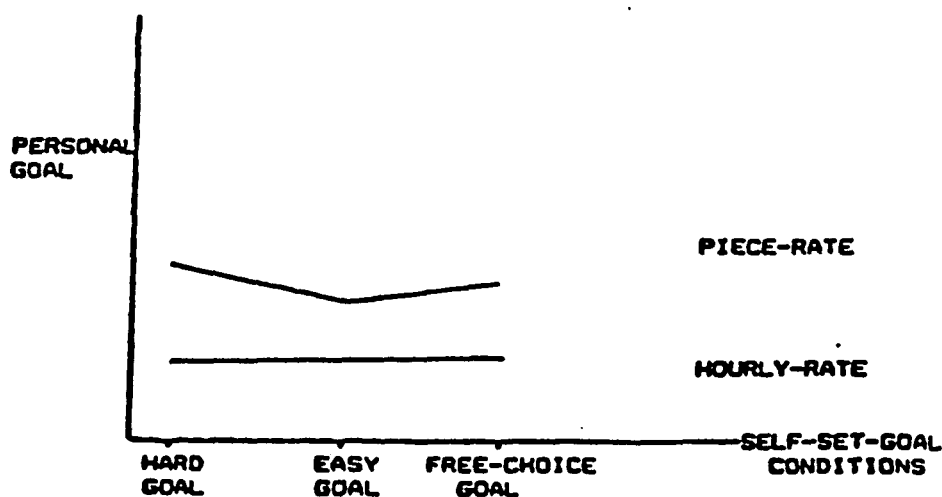


Figure 2B. The hypothesized impact of the interaction between methods of payment and self-set-goal conditions on personal goal for low-self-esteem subjects

rewarded as compared to the latter. Therefore, a hard goal resulting in high productivity should lead to more money, hence hard goals are likely to result in higher extrinsic rewards than easy goals or free-choice goals.

It is expected, however, that levels of self-esteem should interact with methods of payment and self-set-goal conditions to influence personal goal choice.

Under the application of piece-rate plans, it is expected that high-self-esteem subjects will set especially higher personal goals under the hard-goal conditions as compared to the easy- and free-choice-goal conditions. However, under the application of the same plans, low-self-esteem subjects will set slightly higher personal goals under the hard-goal condition as compared to the easy- and free-choice-goal conditions (see H1: A1, B1).

The rationale for that is as follows: high-self-esteem subjects--relative to low-self-esteem subjects--should appreciate the challenge that the hard goals impose on them (Locke, et al. 1981), and be able to cope with stress (Howell, Bellenger & Wikoa, 1987). In addition, high-self-esteem subjects are accustomed to success, so their efforts are directed to maximize success and to excel, while low self-esteem individuals believe that their performance is inadequate, so they work to remedy their personal deficiencies to reach minimal level of performance (Baumeister, et al., 1985). Hollenbeck and Brief (1987)

found a positive relationship between task-specific ability and goal difficulty.

The high self-perceived ability of high-self-esteem subjects should produce greater expectancy of task success and of attainment of hard goals (see Hollenbeck & Brief, 1987; Hollenbeck & Klein, 1987; Lawler, 1973) which lead them to adopt harder goals than low-self-esteem subjects (see H3).

The strength of the differences in intention across goal conditions between high- and low-self-esteem subjects should also be related to differences in the amount of extrinsic rewards expected. That is, under the application of piece-rate plans, high-self-esteem subjects, as compared to low-self-esteem subjects, are expected to set more difficult goals and to work harder to achieve those goals under the hard-goal conditions than under the other-goal conditions. Accordingly, the amounts of money expected by high-self-esteem subjects under the hard-goal condition, as compared to the easy- or free-choice-goal conditions, should be greater than those amounts expected by low-self-esteem subjects. Therefore, high-self-esteem subjects should perceive greater extrinsic rewards associated with high productivity or attainment of hard goals than low-self-esteem subjects (see H4).

It is expected also that, for high-self-esteem subjects, the strength of the differences in intention

across goal conditions should be of similar direction (i.e., higher personal goals should be set under the hard-goal condition than under the other goal conditions), but stronger under the piece-rate plans than under the hourly-flat-rate plans (see H1: A1, A2). The rationale for this is that: while hard goals are not rewarded under the hourly-rate plans (in terms of money), high-self-esteem subjects will try to set somewhat harder goals under the hard-goal condition than under the easy and free-choice goal conditions. This is because high-self-esteem subjects are likely to experience, and attach greater importance to, intrinsic rewards resulting from accomplishing difficult tasks (Bandura & Schunk, 1981; Farr et al., 1977; Locke et al., 1970; Locke et al., 1981); that is, there are both personality and situational (goal difficulty) reasons for high-self-esteem subjects to behave effectively under the hourly plans.

For low-self-esteem subjects, under the application of hourly-flat-rate plans, it is expected that there will be no significant differences in personal goals set under the hard, easy, or free-choice goal conditions. The rationale for that is: since under the hourly-rate plans, the amount of money received will be the same, regardless of goal levels; low-self-esteem subjects are unlikely to show any response to goal conditions regarding personal goals. Accordingly, there is neither a personality nor a

situational reason for low-self-esteem subjects to behave effectively in the absence of monetary rewards (see Hechler & Wiener, 1974; Terborg et al., 1980; Yukl & Latham, 1978).

Hypothesis 2

A three-way interaction among methods of payment, self-set-goal conditions, and levels of self-esteem in influencing subjects' productivity, goal attainment, and satisfaction is expected with the following components:

- A: With high self-esteem, self-set-goal conditions will interact with methods of payment in determining productivity, goal attainment, and satisfaction such that:
 - A1: Under the application of piece-rate plans, the manipulation of a hard-self-set-goal condition will result in especially higher productivity, goal attainment, and satisfaction compared with the productivity, goal attainment, and satisfaction under the manipulation of either easy-self-set-goal condition, or free-choice-self-set-goal condition.
 - A2: Under the application of hourly-flat-rate plans, the manipulation of a hard-self-set-goal condition will result in slightly higher productivity, goal attainment, and satisfaction compared with the productivity, goal attainment, and satisfaction under the manipulation of either easy-self-set-goal condition or free-choice-self-set-goal condition.
- B: With low self-esteem, self-set-goal conditions will interact with methods of payment in determining productivity, goal attainment, and satisfaction such that:
 - B1: Under the application of piece-rate plans, the manipulation of a hard-self-set-goal condition will result in slightly higher productivity, goal attainment, and

satisfaction compared with the productivity, goal attainment, and satisfaction under the manipulation of either easy-self-set-goal condition, or free-choice-self-set-goal condition.

B2: Under the application of hourly-flat-rate plans, there will be no significant differences in productivity, goal attainment, and satisfaction under the manipulation of hard, easy, and free-choice self-set-goal conditions.

Hypothesis 2 is diagrammed in Figures 3a and 3b.

The rationale for Hypothesis 2, concerning productivity (and goal attainment), follows directly from the rationale for Hypothesis 1 and the positive relationship between intention (goals) and productivity, suggested by Locke (1968) and supported by Several researchers (e.g., Locke et al., 1970; Locke et al., 1968; Locke, 1966).

The positive relationship between intention and productivity should especially be strong under self-set-goal situations because the goal one sets should be consistent with one's perceived ability. Therefore, subjects' commitment to the goal, and consequently subjects' attainment of the goal, should be high. Hollenbeck and Klein (1987) point out that empirical support from both laboratory and field research (e.g., Erez, et al., 1985) shows that groups allowed to establish their own goals exhibited high commitment, relative to groups that were assigned goals. Austin (1989) shows that

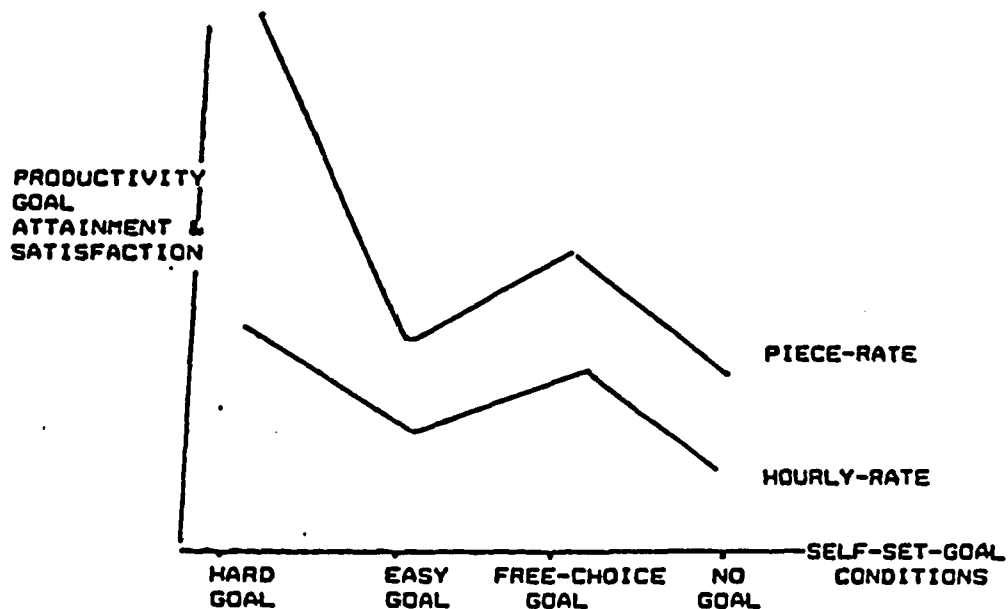


Figure 3A. The hypothesized impact of the interaction between methods of payment and self-set-goal conditions on productivity, goal attainment, and satisfaction for high-self-esteem subjects

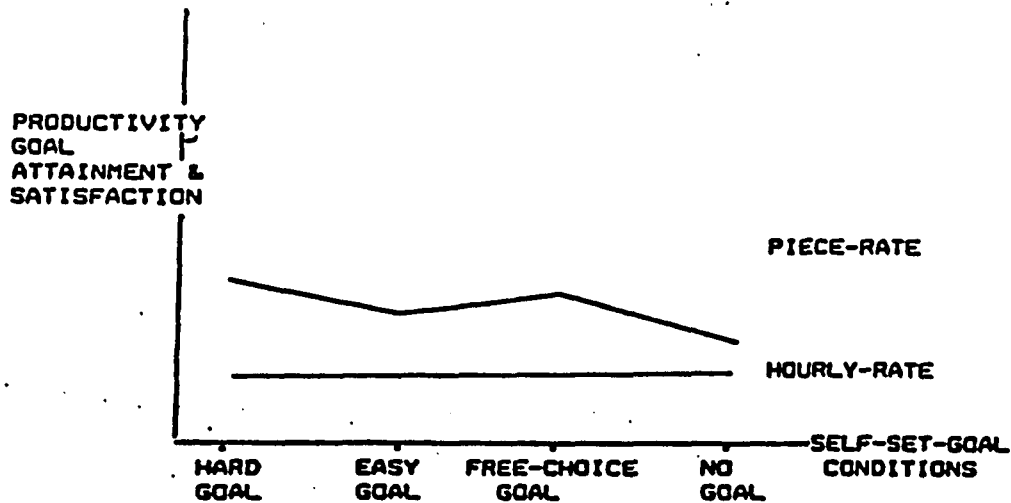


Figure 3B. The hypothesized impact of the interaction between methods of payment and self-set-goal conditions on productivity, goal attainment, and satisfaction for low-self-esteem subjects

self-set goals allow individuals to maximize their goal attainment because perceived control over the goal is high.

As 3 out of the 4 conditions in this study involve self-set goals, the researcher expects personal goals to be strongly predictive of productivity in the 3 conditions. Hence the hard-self-set-goal conditions, as compared to the easy, free-choice, and no self-set-goal conditions should result in the highest personal goal being set, and the highest level of productivity (and of goal attainment), accordingly.

The rationale for Hypothesis 2, concerning satisfaction, is derived directly from the rationale for Hypothesis 1 and the relationship expected between productivity and satisfaction, suggested by the expectancy theory and Porter and Lawler (1968). Since productivity (and goal attainment) is expected to be higher under the hard-goal conditions than under the easy, free-choice, or no-goal conditions, it is expected that satisfaction will also be higher under the hard-goal conditions, as compared to the other-goal conditions. The rationale for this is that intrinsic rewards that are contingent on high productivity (or on accomplishment of hard goals) should be higher under the hard-goal condition than under the other-goal conditions.

The strength of the differences in satisfaction, however, should be of similar direction across goal

conditions but stronger under the piece-rate plans as compared to the hourly-rate plans. The rationale for that is derived from the expectancy theory and Porter and Lawler's (1968) model which show that, if productivity and monetary rewards are positively related to a high degree, then high performers should experience great fulfillment. Accordingly, under the piece rate plans, high performers (and those who attain their goals) should get higher amounts of extrinsic rewards (and hence be more satisfied) than high performers (and those who attain their goals) under the hourly-flat-rate plans. The positive effect of monetary rewards on satisfaction is supported by several research (e.g., Cherrington, 1973; Cherrington et al., 1971 ; Fossum, 1979).

It is expected, however, that levels of self-esteem should interact with methods of payment and self-set-goal conditions to influence productivity (or goal attainment), and hence satisfaction.

Therefore, under the application of piece-rate plans, it is expected that high-self-esteem subjects will have especially higher--while low-self-esteem subjects will have slightly higher--levels of satisfaction under the hard-goal conditions as compared to the easy, free-choice, and no-goal conditions.

The rationale for that is as follows: (1) research shows that high task-specific-self-esteem subjects set more

difficult goals than low task-specific-self-esteem subjects (e.g., Hollenbeck & Brief, 1987). In addition, research (e.g., Carroll & Tosi, 1970; Dossett et al., 1979; Yukl & Latham, 1978) shows also that high-self-esteem individuals have tried harder in response to a difficult goal than low-self-esteem individuals; (2) incentive systems should have greater influence for those who believe in their ability than for those who do not believe in their ability (Korman, 1970; Lawler, 1973; Porter & Lawler, 1968) especially when hard-goal setting is also emphasized. Accordingly, high-self-esteem subjects are expected to earn greater amounts of money than low-self-esteem subjects and, according to Porter and Lawler's (1968) model, the former subjects should be more satisfied than the latter.

In addition, for high-self-esteem individuals, it is expected that the strength of the differences in satisfaction across goal conditions should be of similar direction as explained before (i.e., hard-goal condition should result in higher satisfaction than the other-goal conditions), but stronger under piece-rate plans than under hourly-flat-rate plans. The rationale for this is that while high productivity is not tied to extrinsic rewards (i.e., money) under hourly-flat-rate system, high-self-esteem subjects will try to work somewhat harder (and accordingly, be somewhat more satisfied) under the hard-self-set-goal conditions than under the easy, free-choice,

and no-goal conditions. This is because of their getting some intrinsic rewards from achieving hard goals, such as pride, which they value (see Bandura & Schunk, 1981; Ford et al., 1985).

For low-self-esteem subjects, however, under the hourly-flat-rate plans, it is expected that there will be no significant differences in satisfaction among the hard, easy, free-choice, and no-goal conditions.

The rationale for this is that hard goals, and hence high productivity under the hourly system, are not tied to monetary rewards, and accordingly, low-self-esteem subjects are unlikely to try hard (and be satisfied) in the absence of these rewards (see Hechler & Wiener, 1974; Yukl & Latham, 1978). Since productivity and both intrinsic and extrinsic rewards will be the same across goal conditions, the amount of satisfaction will also be the same across these conditions.

The mechanism of influence

The following two hypotheses are designed to explain the mechanism by which the interaction among goal conditions, methods of payment, and self-esteem influences personal goal, productivity, goal attainment, and satisfaction. The researcher argues that the impact of this interaction on these dependent variables could be

explained by the following two variables:

(1) perceived expectancy; and (2) perceived valences of job performance.

Hypothesis 3

A two-way interaction between self-set-goal conditions and self-esteem in influencing perceived expectancy is expected with the following components:

- A. For high-self-esteem subjects, there will be no significant differences in perceived expectancy (that high effort will lead to high productivity) among self-set-goal conditions.
- B. For low-self-esteem subjects, perceived expectancy (that high effort will lead to high productivity) will be significantly lower under the hard-goal condition than under either the free-choice-goal condition, easy-goal condition, or no-goal condition.
- C. There will be a significantly positive relationship between perception of expectancy and either personal goal, or productivity, and this relationship should be:
 - 1. Higher under the hard-goal condition than under either the easy-goal condition, free-choice-goal condition, or no-goal condition.
 - 2. Higher for high-self-esteem subjects than for low-self-esteem subjects.

Hypothesis 3 is diagrammed in Figure 4.

The rationale for Hypothesis 3 (A and B) is as follows:

While overall hard-goals lead to lower expectancy of task success than easy goals (see Campbell, 1984; Garland, 1984; Matsui et al., 1981; Mento et al., 1980); the high

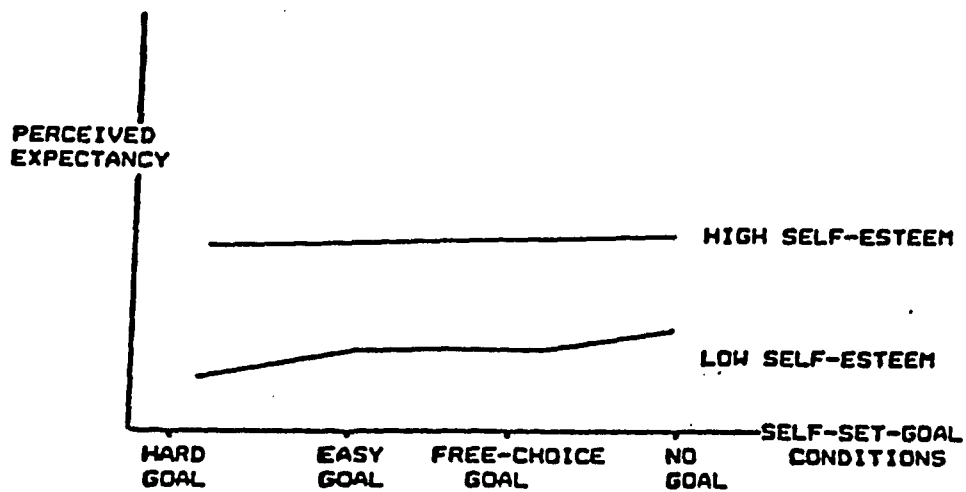


Figure 4 . The hypothesized impact of the interaction between self-set-goal conditions and self-esteem on perceived expectancy

self-perceived ability and confidence of high-self-esteem subjects will cause those subjects to have higher perception of task success under the hard-goal conditions than low-self-esteem subjects. Hollenbeck and Brief (1987) found a positive relationship between task-specific-self-esteem and the expectancy of attaining the goal. In addition, expectancy of task success is found to be positively related to self-efficacy (Locke, et al., 1984).

Therefore, high-self-esteem subjects will not be discouraged by the pressure that hard-goal manipulation imposes; instead they will appreciate the challenge of the hard goals and exert more effort in the face of those goals, as opposed to low-self-esteem subjects.

Concerning hypothesis 3C, it is expected that there will be a significant positive correlation between expectancy and both personal goal and productivity. As previously explained, a self-set goal is a situation in which perceived expectancy-goal choice (or perceived expectancy-productivity) relationships are enhanced. That is, to the extent that subjects set realistic goals (which exactly reflect their perception of their abilities and capabilities), subjects' commitment to their goals, as well as attainment of those goals will be increased. Research shows that subjects' participation in goal setting enhance goal commitment (e.g., Erez & Arad, 1986; Erez et al., 1985; Riedel et al., 1988) as well as goal attainment

(Austin, 1989).

The correlation between expectancy and either personal goals or productivity, however, should be stronger under the hard-goal condition, as compared to the other-goal conditions. This is because the former condition, relative to the latter conditions, requires more awareness of the consequences (for example, subjects should think twice before choosing a hard goal); hence more responsibility toward achieving hard goals is expected. This rationale is also consistent with Locke (1968) who argues that the higher the goal, the higher the intention and the effort to attain that goal.

In addition, this correlation between expectancy and either personal goal (or productivity) is expected to be stronger for high-self-esteem subjects than for low-self-esteem subjects. While both low- and high-self-esteem subjects are expected to set goals consistent with their expectancy of task success, high-self-esteem subjects, according to Lawler (1973), should have a more realistic expectancy than low-self-esteem subjects. Accordingly, the former subjects would be able to set more realistic goals, and be able to work harder to attain those goals than the latter. Research (e.g., Mento, et al., 1980; Motowidlo et al., 1978) shows that subjective probability of task success (which is positively influenced by self-perceived ability) is responsible for a positive

relationship between expectancy and performance.

Hypothesis 4

A three-way interaction among methods of payment, self-set-goal conditions, and levels of self-esteem in influencing perceived total valences of job performance is expected with the following components:

- A: For high self-esteem, self-set-goal conditions will interact with methods of payment in determining perceived total valences of job performance such that:
 - A1: Under the application of piece-rate plans, perceived total valence of job performance will be especially higher under the hard-goal condition as compared with the easy-goal condition, free-choice-goal condition, and no-goal condition.
 - A2: Under the application of hourly-flat-rate plans, perceived total valence of job performance will be slightly higher under the hard-goal condition than under the easy-goal condition, free-choice-goal condition, or no-goal condition.
- B: For low self-esteem, self-set-goal conditions will interact with methods of payment in determining perceived total valences of job performance such that:
 - B1: Under the application of piece-rate plans, perceived total valences of job performance will be slightly higher under the hard-goal condition as compared to the easy-goal condition, free-choice-goal condition, or no-goal condition.
 - B2: Under the application of hourly-flat-rate plans, there will be no significant differences in perceived total valences of job performance under the hard-goal condition, easy-goal condition, free-choice-goal condition, or no-goal condition.

Hypothesis 4 is diagrammed in Figure 5a and 5b.

It is expected that subjects who are exposed to a situation in which hard goals are manipulated should have a higher perception of valences of job performance than subjects who are exposed to situations in which easy, free-choice, or no goals are manipulated. For example, Locke and Bryan (1967) argue that challenging-difficult goals cause the task to be more interesting than easy-unchallenging goals. That is, greater intrinsic rewards are associated with attainment of hard goals than those rewards associated with attainment of easy goals or no goals. To the extent that those rewards are valued job outcomes, then hard goals should result in greater valences of job performance than easy or no goals. Research (e.g., Brehm et al., 1983; Matsui et al., 1981; Riedel et al., 1988) shows that subjects working under the hard-goal conditions perceived greater valences of job performance than subjects working under the easy-goal or no-goal conditions. In addition, the strength of the differences in perceived valences of job performance across goal conditions should be of similar direction as explained above, but stronger under the piece-rate plans than under the hourly-rate plans. This is because under the former plans, perceived instrumentality that high performance leads to more money is very high (as each unit produced is rewarded). To the extent that money is a valued job

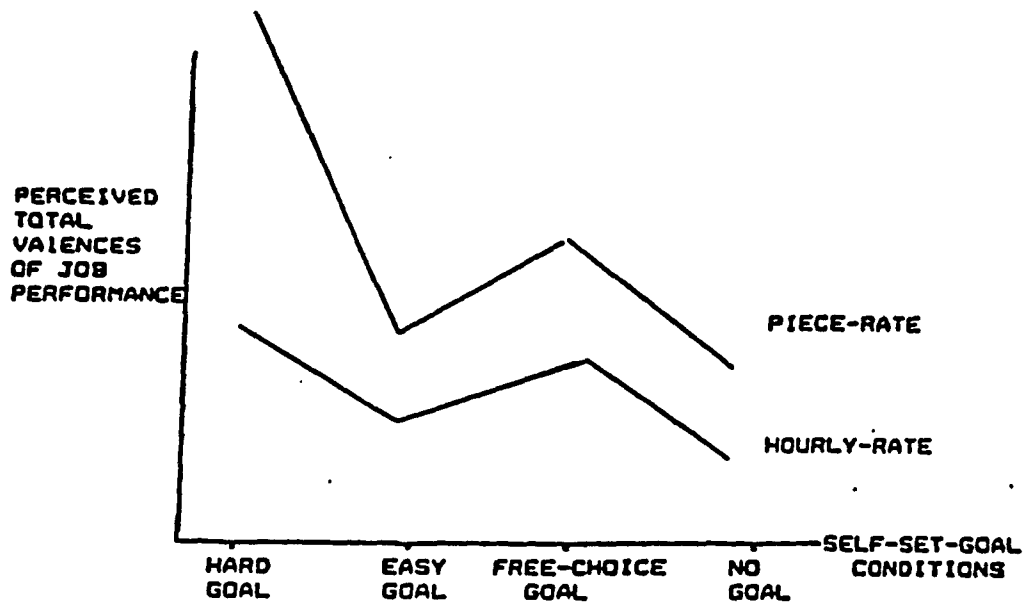


Figure 5A. The hypothesized impact of the interaction between methods of payment and self-set-goal conditions on perceived total valences of job performance for high-self-esteem subjects

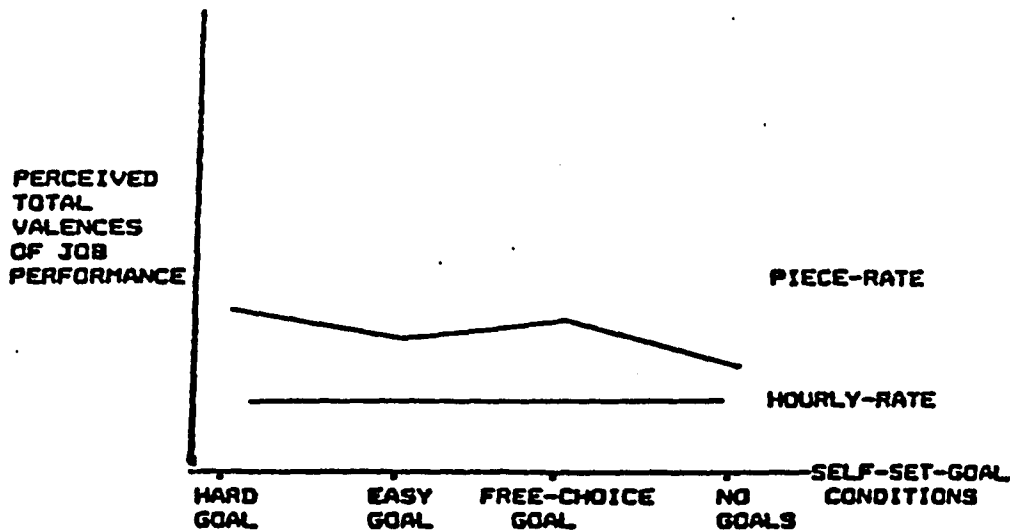


Figure 5B. The hypothesized impact of the interaction between methods of payment and self-set-goal conditions on perceived total valences of job performance for low-self-esteem subjects

outcome, then, greater perception of valences of job performance should be associated with attainment of hard goals under the piece-rate plans than under the hourly-rate plans. Research (e.g., Dachler & Mobley, 1973; Riedel et al., 1988; Toro, 1976) shows that valences of goal attainment were higher under the reward than under the nonreward systems.

It is expected that self-esteem will interact with methods of payment and self-set goal conditions to influence perceived valences of performance. That is, under the application of piece-rate plans, it is expected that high-self-esteem subjects should perceive valences of job performance to be especially higher--while low-self-esteem subjects should perceive these valences to be slightly higher--under the hard-goal condition as compared to the easy, free-choice, and no-goal conditions.

The rationale is that the high self-perceived ability that characterizes high-self-esteem subjects, as compared to low-self-esteem subjects, will cause the former to set harder goals (and to work harder to achieve those goals) than the latter. Therefore, the amount of money expected by high-self-esteem subjects should be greater than the amount expected by low-self-esteem subjects. To the extent that money is a valued job outcome, greater perception of valences of job performance is expected for high-self-esteem subjects than for low-self-esteem subjects.

In addition, for high-self-esteem subjects, it is expected that the strength of the differences in valences of job performance across goal conditions should be of similar direction as explained above, but stronger under the piece-rate plans as compared to the hourly-rate plans. The rationale for this is that while high productivity is not tied to extrinsic rewards (i.e., money) under the hourly-flat-rate system, high-self-esteem subjects will try to work somewhat harder (and accordingly have somewhat higher perception of valence of job performance) under the hard-self-set-goal conditions than under the easy, free-choice, and no-goal conditions because of their achieving some intrinsic valued rewards, such as pride.

For low-self-esteem subjects, however, under the hourly-flat-rate plans, it is expected that there will be no significant differences in perceived total valences of job performance among the hard, easy, free-choice, and no goal conditions. This is because: (1) hard goals, and hence, high productivity under the hourly-rate plans are not tied to monetary rewards (i.e., perception of instrumentality that high productivity leads to high rewards is very low); and (2) low-self-esteem subjects are less likely to work hard in the absence of extrinsic rewards (see Hechler & Wiener, 1974; Yukl & Latham, 1978). Since productivity (and hence, intrinsic and extrinsic rewards) is not expected to differ significantly across

goal conditions, valences of job performance are also not expected to differ across them.

In the next chapter, the research methods, the experimental design, and procedures will be reviewed.

CHAPTER 4

METHODS

This chapter discusses the methods of the study in terms of the research experimental design, sample, pretesting, measurements, experimental procedures, and data analysis.

The research experimental design

The research experimental design is a 2 by 4 multi-factorial design with two methods of payment (i.e., piece-rate and hourly-flat-rate plans), and four self-set-goal conditions (i.e., hard- self-set goals, easy-self-set goals, free-choice-self-set goals, and no goals). This design has included one covariant (i.e., self-esteem) (see Figure 6).

Subjects and sample

Subjects were undergraduate students at Baruch College, the City University of New York, who were paid to participate in the study in response to an advertisement asking for undergraduate students to perform part-time clerical work for two hours. Table 1 shows the characteristics of the subjects.

The total sample in this research is 184 students which means that 23 students have participated in each cell

METHODS OF PAYMENT	PIECE- RATE	1	3	5	7
	HOURLY- RATE	2	4	6	8
		HARD GOAL	EASY GOAL	FREE-CHOICE GOAL	NO GOAL
SELF-SET-GOAL CONDITIONS					

Figure 6. The research experimental design

Table 1
Characteristics of Study Sample

	<u>N</u> 184	<u>Percent</u> 100
<u>Sex</u>		
Male	102	55.4
Female	82	44.6
<u>Year in College</u>		
Freshman	28	15.2
Sophomore	77	41.8
Junior	21	11.4
Senior	57	31.0
Missing	1	.5
<u>Marital Status</u>		
Married	17	9.2
Single	163	88.6
Separated	2	1.1
Divorced	2	1.1
<u>Major in College</u>		
Management	41	22.2
Finance	30	16.3
Marketing	32	17.4
Behavior Science	7	3.8
Accounting	47	25.5
Others	17	9.2
Undecided	9	4.9
Missing	1	.5
<u>Annual Salary of the Student</u>		
Less than \$5,000	87	47.3
\$5,000-\$10,000	41	22.3
\$10,000-\$15,000	17	9.2
\$15,000-\$20,000	16	8.7
\$20,000 and up	16	8.7
No Income	5	2.7
Missing	2	1.1

Table 1 (Continued)

	<u>N</u> 184	<u>Percent</u> 100
<u>Occupation</u>		
Clerical	39	21.2
Professional	20	10.9
Managers	8	4.3
Services	45	24.5
Other	3	1.6
None	66	35.8
Missing	3	1.6
<u>Organizational Types</u>		
Industrial	6	3.3
Services	76	41.3
Others	32	17.4
Not Applicable	66	35.8
Missing	4	2.2

Age (*)

(*) Mean age is 23.478 (Min, 16; Max, 54)

of Figure 6.

The total sample of this research has been determined using the methods provided by Cohen (1977). Cohen points out that the sample size in a factorial experimental design should be a function of the following:

1. Number of cells involved.
2. Parameter of significance criterion (whether it is .05, or .01)
3. F-value (the standard deviation of the standardized K population means).
4. Specific amount of statistical power desired.
5. Degrees of freedom involved.

Cohen (1977) argues that, everything being equal, the larger the sample size, the smaller the error and the greater the reliability of results. In addition, the larger the sample size, the greater the statistical power, i.e., the greater the probability of detecting the phenomenon under investigation (Cohen, 1977).

Choosing a normal value for F (i.e., .25), a significance criterion of .05 (which is common in social science research), degrees of freedom of 1 and 3 (which was determined according to the number of cells containing the main effects of the research factorial design), and a statistical power of .80, the sample size should be 184 subjects to detect each of the main and interactive effects of methods of payment and self-set-goal conditions (see

Table 8. 4. 4; p. 364 in Cohen, 1977). Table 2 shows the sample size required for the main and interactive effects.

The researcher has chosen .80 as an acceptable level of statistical power because a higher statistical power would require a larger sample size which is beyond the capacity of this research.

Pretest

A pretest was conducted to test the validity of the experimental manipulation concerning self-set-goal conditions and methods of payment. 16 students--at Baruch College--voluntarily participated in the study. They responded to an advertisement asking for undergraduate students to perform part-time clerical work for two hours for which they would be paid.

These students were randomly assigned to the experimental conditions. This resulted in assigning two students to each condition.

The pretest was very helpful in identifying some problems* related to the manipulation of the free-choice-

* Under the free-choice-self-set goal condition--as opposed to the other-goal conditions--subjects were asked to choose whichever goal they would like to pursue using a scale ranging from 1% (very easy goal) to 100% (very hard goal). This scale caused subjects to choose higher levels of goals as compared to the other-goal conditions where subjects were not provided with such a scale. Accordingly, the researcher removed this scale from the manipulation of the free-choice-self-set goal condition.

Table 2

Sample Size Needed for the Main and
Interactive Effects in the A X B (2 by 4)
Factorial Design

Effects	a	u	F	Power	nc(*)	N	Power at Sample of 184*
MP(A)	.05	1	.25	.80	17	136	.92
SSGC (B)	.05	3	.25	.80	23	184	.81
(A)x(B)	.05	3	.25	.80	23	184	.81

MP: Methods of payment.

SSGC: self-set-goal conditions

a = parameter of significance criterion
(n' - 1) (u + 1)

(*) nc = $\frac{\text{number of cells}}{\text{number of cells}} + 1$

Where nc = sample size per cell in the factorial design,
n' = sample size provided by the table of the sample size,
u = degrees of freedom of each main effect

For example the number of subjects in each cell to detect
the two-way interactive effects is as follows:

$$nc = \frac{(45 - 1)(3 + 1)}{8} + 1 = \frac{44(4)}{8} + 1 = \frac{176}{8} + 1 = 22 + 1 = 23$$

Total sample size = 23 subjects per cell X number of cells
(8) = 184 subjects.

$$\text{* power of (A) at sample of 184} = \frac{\text{denominator df}}{u + 1} + 1$$

$$= \frac{\text{total N - number of cells}}{u + 1} + 1$$

$$= \frac{(184 - 8)}{2} + 1 = 89$$

From Table 8. 3. 12 (in Cohen 1977), for a = .05, u = 1, F
= .25, N = 88, the power of detecting the effect of methods
of payment (A) with a total sample of 184 is .92.

Power of detecting the main effect of SSGC (B) or the
interactive (AXB) effect at total sample size of 184 =

$$\frac{(184 - 8)}{4} + 1 = 44 + 1 = 45$$

From Table 8. 12. 14 for a = .05, u = 3, F = .25, N = 45,
the power is .81 (calculated as an average of the power at
N = 44 and N = 48) since the exact N is not available in
the Table.

self-set goal condition. In addition, the pretest revealed also that the manipulation of self-set-goal conditions was valid. 75% or more of the subjects in each goal condition--when asked which goal condition they were working under--checked the right answer corresponding exactly to the goal condition under which they were working.

Moreover, the manipulation of methods of payment was also found to be valid since more than 85% of subjects in each method of payment condition--when asked which methods of payment they were working under--reported exactly the same method of payment condition under which they were working.

Manipulations and measurements

This section will describe the measurements and manipulations used to assess each of the research variables along with their reliability and validity. A copy of the questionnaire containing the measures and the manipulation of the research variables is in Appendix A.

A. Manipulation of the independent variables

The independent variables in this research are the following:

1. Methods of payment.
2. Self-set-goal conditions.

1. Methods of payment: Methods of payment included two kinds: piece-rate plans, where subject's payment is based on his/her output, and hourly-flat-rate plans, where subject's payment is based on his/her participation regardless of the amount of the output produced. The specific manipulations that were given to subjects under both conditions are shown in the questionnaire in Appendix A. All subjects were told that they have already gained \$4 for their participation in the practice trial. However, for the next trial (the experimental trial) subjects in the piece-rate conditions were told that they were going to be paid 1 cent for each answer correctly coded, whereas those in the hourly conditions were told that they would receive \$4 for their participation in 20 minutes of correctly coding answers from questionnaires to IBM computer sheets. Subjects in piece-rate conditions who made less than \$4 were given no less than this amount, but they were not aware of that until the end of the experiment.

To check on the validity of the manipulation of methods of payment, subjects were asked to describe the payment system being applied to them, using a one item scale with two alternatives (see question No. 24 in the questionnaire in Appendix A).

2. Self-set-goal conditions: self-set-goal

conditions included the following:

1. Hard-self-set-goal condition.
2. Easy-self-set-goal condition.
3. Free-choice-self-set-goal condition.
4. No-goal condition.

In the first goal condition, each subject was asked to set him/herself a difficult goal and work hard to achieve that goal. In the second goal condition, each subject was asked to relax and set him/herself an easy goal. In the third goal condition, each subject was asked to set whatever goal he/she would like to pursue, i.e., each subject was free to set any goal for him/herself. The specific manipulation regarding each goal condition is shown in the questionnaire in Appendix A. In the fourth goal condition, neither goal setting, nor goal difficulty were manipulated, that is, subjects received no information at all about goals.

To check on the validity of goal manipulations, subjects were asked several questions, as follows:

1. After the manipulation of each goal condition, and before working on the experimental task, each subject was asked to write down his/her chosen personal goal in terms of percentile improvement in productivity above his/her productivity in the practice trial. Each subject also was asked to report how hard his/her chosen goal was. Each

subject was provided with a scale ranging from "a very easy goal" to "a very hard goal" to choose from (see question No. 13 in the questionnaire in Appendix A). These two questions were repeated again after performing the experimental task to assure that each subject had kept his/her goal in mind while working in the experimental task (see question No. 18 in the questionnaire in Appendix A).

2. After performing the experimental task, each subject was also asked to describe the goal condition being applied to him/her (see question No. 23 in the questionnaire in Appendix A).

B. Measurements of the moderating variable (self-esteem)

Review of the literature of self-esteem measurements shows that self-esteem could either be manipulated experimentally, or measured using self-report measurements. Manipulating self-esteem in the lab involves giving subjects false feedback about either their personality, or about task failure/success. The researcher was in favor of the manipulation of self-esteem--rather than measuring it, by using the self-report measurements. This is because of the belief that the induced change in self-esteem levels--through manipulation--would be considerable enough to reveal the causal relationship in which the self-esteem

construct is involved (Wells & Marwell, 1976) so greater validity in testing the research hypotheses may be warranted. However, because of severe ethical, conceptual, and methodological problems involved in self-esteem manipulation (see Wells and Marwell, 1976 for a review), the researcher decided not to use self-esteem manipulation.

As previously explained, Korman (1976) specified three dimensions of self-esteem, as follows: 1. Trait components (Chronic, or global, self-esteem); 2. Task-specific self-esteem; and 3. Social self-esteem.

In measuring self-esteem, the researcher focused only on the first two dimensions because they were more related to the research conceptual scheme than the third dimension. In addition, task-specific self-esteem dimension is found to be empirically useful. Tharenou (1979) indicates that predictions of expectancy theory are more likely to be supported with measure of task competence, rather than with a global measure of self-esteem. Moreover, his research found that there is no relationship between global self-esteem and performance, while the measure of task-competence self-esteem showed a strong relationship with performance. Furthermore, McIntire and Levine (1984) indicated that task-specific self-esteem has been successful in the laboratory setting. Both Cohen and Lefkowitz (1977) and Greenhaus and Badin (1974) found that task-specific self-esteem is the best predictor in a

laboratory setting.

Regarding the trait dimension, self-esteem was measured by two different scales:

1. The Coopersmith self-esteem inventory--the short form (Coopersmith, 1967).
2. The Rosenberg self-esteem scale (Rosenberg, 1965).

The Coopersmith self-esteem inventory consisted of 29 items. The items are short statements answered by selecting either "like me" or "unlike me" (see the scale in the questionnaire in Appendix A, question No. 10), scored 2 and 1, respectively. Ten of those items are negatively worded and reverse scored(*). The Coopersmith self-esteem scale is described as covering the history and the background of a person such as parents, school, and peers. Taylor and Reitz (1968, reported in Robinson & Shaver, 1973) reported .90 (split-half) and .88 (test-retest over 5 weeks) reliabilities. The scale also shows good reliability (.77) in some other studies (e.g., Yukl & Latham, 1978), and good convergent, discriminant, and predictive validity (see Robinson & Shaver, 1973, for review). Hence the scale has been applied by many researchers which indicates its wide applicability as a useful measure of self-esteem. In the present study, the reliability (coefficient alpha) of the Coopersmith self-

(*) Items No. 4, 5, 7, 9, 10, 12, 15, 22, 24, 28.

esteem scale was found to be .77 (internal consistency).

The Rosenberg self-esteem scale is a 10-item scale answered on a four-point scale ranging from strongly agree to strongly disagree, scored 3-1 (instead of 4-1), respectively, since in each item, two out of the four possible responses (rather than one) were referring to high self-esteem. Of the ten items, five are negatively worded and reverse scored(*) (see Rosenberg self-esteem scale in the questionnaire, in Appendix A, question No. 11).

The Rosenberg self-esteem scale is designed to measure the self-acceptance dimension of self-esteem (Rosenberg, 1965). Silber and Tippet (1965, reported in Robinson & Shaver, 1973) reported reliability (test-retest) of .85. The present study showed reliability (internal consistency) of .69. For a full review of convergent, discriminant, and predictive validity, see Robinson and Shaver (1973).

The reason for measuring self-esteem, in the present study, by two trait measures, rather than one, is to provide a greater validity to the research results.

The Rosenberg self-esteem scale shows a significant positive correlation ($r = .55$, $p = .000$) with the Coopersmith self-esteem scale.

Rosenberg and Coopersmith self-esteem scales were standardized using a Z score. Both scales were then

(*) Items No. 1, 2, 4, 6, 7.

combined together in the research to serve as a one trait measure of self-esteem. The reason for that was that the Rosenberg self-esteem scale showed a very little variance since the mean was extremely high.

To measure the second dimension of self-esteem (i.e., task-specific self-esteem), the researcher used a composite measure of: (a) a modified 5-item self perceived ability measure suggested by Hollenbeck and Brief (1987); and (b) 3 items adapted from Wagner and Morse's (1975) sense of competence measure (see question No. 12, items 1-8, in the questionnaire in Appendix A).

Self-perceived ability (Hollenbeck & Brief, 1987) is answered on a 5-point scale ranging from strongly disagree to strongly agree, which scored 1-5, respectively (see question No. 12, items No. 1-5 in the questionnaire, in Appendix A). Two of these five items are negatively worded and reverse scored(*). Hollenbeck and Brief (1987) reported reliabilities (coefficient alpha and test-retest) of .89 and .82, respectively.

The last three items of the task-specific-self-esteem measure were adapted from Wagner and Morse (1975) and scored the same as the above 5 items. The internal consistency reliability as well as content and predictive validity of this scale were tested and found to be

(*) Items No. 2 and 4.

satisfactory (see Wagner & Morse, 1975).

The present study, however, showed an internal consistency reliability of .44 for the eight-items measuring task-specific self-esteem, which is somewhat low. Unfortunately, in the present study, this scale showed no significant relationship to the self-esteem scales, suggested by Coopersmith and Rosenberg, which were reported before.

C. Measurements of the intervening variables (the expectancy theory variables)

1. Perceived expectancy

Perceived expectancy was measured by two kinds of scales, as follows:

A. Perceived effort-performance probability of achieving a high level of performance, under the assumption of high and low effort.

B. Perceived self-efficacy strength: Perceived effort- performance probability of several levels of performance.

The reason for using the measure of self-efficacy strength with the measure of effort-performance probability to measure expectancy is that--as explained before--researchers (e.g., Garland, 1984; Locke et. al., 1984) have shown that both measures have yielded different

correlations with measure of productivity.

A. Perceived effort-performance probability: A single-item rated on an 11 point scale--ranging from (0%) indicating an extremely poor chance to (100%) indicating an extremely high chance--was designed to measure effort-performance probability of achieving a high level of productivity, under the assumption of high level of effort. The same item was repeated, under the assumption of exerting a low level of effort (see questions No. 14a and 14b, respectively, in the questionnaire in Appendix A). The reason for this was to assure the validity of the expectancy manipulation. According to the expectancy theory, subjects should report higher perception of expectancy under the assumption of exerting a high level of effort than under the assumption of exerting a low level of effort.

B. Self-efficacy scale: The self-efficacy scale is adapted (with modification) from Locke et al. (1984) (see question No. 17 in the questionnaire, in Appendix A). Locke et al. (1984) developed the scale which is based on Bandura's conceptualization of the dimensions of self-efficacy, that is, magnitude and strength of self-efficacy. "Magnitude" is the total number of "yes" in the first column of the scale, while "strength" is the summation of

the perceived effort-performance probability for the eleven levels of performance in the second column of the scale. The researcher focused on the self-efficacy strength (without taking self-efficacy magnitude into consideration) to equate self-efficacy strength with the typical measure of expectancy (effort-performance probability).

2. Perceived instrumentality (performance-reward probability)

Perceived instrumentality of high performance to high positive (and less negative) rewards was measured using a scale adapted--with some modification--from Toro (1976). The scale is a single item rated on an 11 point scale ranging from (0%) indicating an extremely low chance to (100%) indicating extremely high chances. The scale deals with subjects' perceived probability that they will attain the following outcomes: money, pride, entertainment, and boredom, given that they have obtained a high level of productivity. The scale is repeated under the assumption that subjects have obtained a low level of productivity (see question No. 15a and 15b, respectively, in the questionnaire in Appendix A). The reason for introducing the scale under the high and low productivity assumptions is to increase the validity of the instrumentality manipulation. According to the expectancy theory,

subjects should report a higher level of instrumentality under the assumption of high productivity than under the assumption of low productivity. The last item of the scale in both questions No. 15a and 15b are negatively worded and reverse scored.

The above outcomes (i.e., money, pride, entertainment, and boredom) were chosen because of their relevance to both the incentive and goal difficulty concepts. For example Locke and Bryan (1967) have shown that goal difficulty enhances subjects' interest in the task, and increases subjects' pride and feeling of accomplishment.

3. Perceived outcome valences

Perceived attractiveness of those outcomes (i.e., money, pride, entertainment, and boredom) that are contingent on high performance is measured by four-items rated on a 7-point scale with (1) indicating extremely unattractive, (6) indicating extremely attractive, and (0) indicating indifference. The last item of the scale is negatively worded and reverse scored. This scale is adapted with modification from Toro (1976).

D. Measurements of the dependent variables

The dependent variables in this research are the following: goal choice (i.e., personal goal), productivity, goal attainment, satisfaction, and goal

commitment.

1. Goal choice (personal goals)

A. Percentage of personal goals (PPG): is the percent improvement in productivity set above productivity in the practice trial. After the manipulation of both methods of payment and self-set-goal conditions--in each experimental condition--subjects were given feedback about the actual number of items coded in the practice trial. Subjects, then, were asked to set their personal goals as corresponding to how much percentage improvement in productivity they would like to achieve --in the second trial--above what they have already achieved in the first (practice) trial.

B. Magnitude of personal goal (MPG): Subjects were asked to rate their personal goals (i.e., PPG) in terms of degree of difficulty. They were provided with a one item rated on 7 point scale ranging from (1) a very easy goal to (7) a very difficult goal, scored 1-7, respectively (see question No. 13 in the questionnaire in Appendix A).

2. Productivity

Productivity is the actual number of items coded. Although subjects were informed that their productivity will be calculated on the number of items correctly coded, measure of productivity was based only on the amount of productivity, rather than on the quality (accuracy in coding). This is because it was extremely difficult to obtain a measure of production quality.

3. Goal attainment

While productivity is measuring the actual amount of work regardless of goal achievement, goal attainment is measuring the extent to which an individual has achieved his/her goal. Goal attainment is measured by subtracting total amount of productivity that subjects were striving to achieve (their goals in terms of the number of items to be produced) from their actual productivity achieved in the second trial. The higher the discrepancy in the negative direction, the lower the goal attainment, and the higher the discrepancy in the positive direction, the higher the goal attainment.

4. Satisfaction

Satisfaction in this research is classified to the following:

Satisfaction with pay: Satisfaction with pay is measured as an individual's affective orientation toward the amount of pay he/she received from his/her work in the experimental task. Measure of pay satisfaction is a two-item scale with a seven-point response option ranging from (1) strongly disagree to (7) strongly agree, scored 1-7, respectively (see question No. 20, items 1 and 2, in the questionnaire in Appendix A). This scale was adapted from the Michigan Organizational Assessment Questionnaire by Cook, Hepworth, Wall, and Warr (1981). Cook et al. (1981) reported reliability (coefficient alpha) of .89. The present research showed reliability (internal consistency) of .88.

Satisfaction with methods of payment:

Satisfaction with methods of payment measures the extent to which subjects have an affective orientation toward either the piece-rate plans, or hourly flat rate plans. The scale is a single-item with 7 point scale ranging from (1) very dissatisfied to (7) very satisfied, scored 1-7, respectively. The scale was developed by the researcher (see question No. 21 in the questionnaire in Appendix A).

Satisfaction with the overall job: This scale measures the overall affective responses to the work. The scale is adapted from Cook et al. (1981), and it consists of three items rated on a 7-point scale ranging from (1) strongly disagree to (7) strongly agree, scored 1-7, respectively (see question No. 20, items 3, 4, 5 in the questionnaire, in Appendix A). One item is negatively worded, and reverse scored*. Cook et al. (1981) reported reliability (coefficient alpha) of .77 and a correlation of the scale with measures of job involvement ranging from .35 to .58. The present study showed reliability (internal consistency) of .709.

Satisfaction with work: This scale is different from the previous one in the sense that it allows subjects to describe their work in many different dimensions. The scale was adapted from the Job Descriptive Index, developed by Smith, Kendall, and Hulin (1969). Subjects were asked to describe their work in terms of different dimensions (see question No. 22 in the questionnaire, in Appendix A). Subjects were asked to put Y beside each item if it describes their feeling, N if the item does not describe their feeling, or ? if they cannot decide. The scoring of this scale was 3, 1, 2 respectively. Eight items were negatively worded, and reverse scored (*). The reliability

* Item No. 4

(*) Items No. 2, 4, 8, 11, 14, 15, 16, 17.

of this scale was calculated by several studies and was found to range from .69 to .90 (Cook, et al., 1981). In the present study, reliability (internal consistency) is found to be .796.

5. Goal commitment

Goal commitment was measured in the present study by adapting a modified measure of goal commitment, developed by Hollenbeck, Williams, and Klein (1989). The scale is a nine item rated on 7 point scale ranging from (1) strongly disagree to (7) strongly agree, scored 1-7, respectively (see item No. 17, in the questionnaire, in Appendix A). Six items were negatively worded and reverse scored* such that a high score on these items reflects high goal commitment. Hollenbeck et al. (1989) reported a coefficient alpha reliability of .88. The present study showed reliability (internal consistency) of .77.

E. Measuring the demographic variables

General background information including standard demographic characteristics (e.g., sex, age, year in college) and work information were assessed with single item statements asking subjects to provide the respective information (see questions No. 1-8 in the questionnaire, in

* Items No. 3, 4, 5, 6, 7, 8.

Appendix A).

Controlling the confounding variables (ability and need for money)

As previously explained, two confounding variables were expected to bring unintended influence on testing the research hypotheses. These variables were ability and need for money. The present research controlled the variance of ability by eliminating its effect from the research which is consistent with Kerlinger (1973).

Accordingly, to make sure that the measure of personal goal was reflecting the goal level (rather than the ability level as appeared in the practice trial productivity), the "percentage improvement in productivity" (rather than the "amount improvement in productivity", i.e., percentage improvement in productivity multiplied by the amount of productivity of the practice trial) was chosen as a measure of personal goal.

In addition, to eliminate the ability effect from the productivity measure, productivity was calculated as the difference between productivity in the practice trial and productivity in the experimental trial, thus, controlling for ability by using the subject as his/her self-control.

To control the need for money, the researcher built it into the research design as a moderating variable.

Kerlinger (1973) points out that, "an extraneous variable

can be controlled by building it into the research design as an attribute variable" (p. 310). Therefore, studying need for money would allow additional information to be known about its main or interactive effects with the research variables.

Need for money was measured with a one item with a 5 point scale ranging from (1) not at all to (5) very much, scored 1-5, respectively (see question No. 9 in the questionnaire, in Appendix A).

Table 3 presents a summary of the major characteristics of the measures including means, standard deviation, and reliability, as found in this study.

Procedures

Before explaining the experimental procedures, several issues need to be clarified.

Task and materials

The task applied in this research consisted of coding answers from a questionnaire to IBM sheets which presumably have been completed by a large number of respondents. In reality, the task has been designed by the researcher. The task consisted of one hundred multiple choice items. Each copy has a number stamped on the right corner of its first page which presumably identifies the respondent who completed it. The subject's duty was to transfer the

Table 3

**Means, Standard Deviation,
and Reliability of All Measures**

Measure	No. of Items	Means	SD	Reliability Coefficients
Coopersimth Self-Esteem Scale	29	49.174	4.853	.773
Rosenberg Self-Esteem Scale	10	28.043	2.283	.698
Task-Specific Self-Esteem Scale	8	30.217	3.440	.440
Goal Commit- ment Scale	9	46.159	8.035	.766
Satisfaction with Pay	2	10.283	2.719	.88
Satisfaction with Overall Job	3	13.217	3.815	.709
Satisfaction with Work	18	33.184	7.078	.796

answer from each question in the questionnaire to a corresponding number on IBM sheets. Each subject was provided with ten questionnaires and was provided also with extra questionnaires, where needed.

This kind of task was chosen because it realistically simulates repetitive task situations that always accompany the application of pay-incentive plans. This task does not provide a subject with intrinsic job satisfaction. In addition, accomplishment of these tasks may also depend on the subjects' effort, rather than ability, thus reflecting subjects' motivation. This task also was perfect for testing the goal effects since most of the goal theory predictions are designed to deal with a repetitive task.

Size of piece-rate

The procedures to determine the size of the piece-rate to be paid were as follows: (1) From conducting some pretesting, it was found that a student on the average was able to code 400 answers in 20 minutes. (2) From conducting some interviews with students, the amount of money to be paid per 20 minutes was determined to be \$4 on the average. Great consideration was given to make the amount of money reasonable and somewhat attractive. Previous research (e.g., Locke et al., 1968) was criticized for paying small amounts of money to subjects participating in goal difficulty/incentives research. (3)

The rate per piece was then determined to be 1 cent for coding each answer.

It should be clarified that for the piece-rate condition, the pay per piece should be set in such a way that if a subject in this condition performed at the same level as a subject in the hourly-flat-rate condition (i.e., when subject's performance is equal in both conditions), then he/she should receive the same pay as a subject in the hourly-flat-rate group.

Degree of goal difficulty

A pretest was done to determine the most difficult goal that a subject could achieve if he/she made the hardest possible effort in 20 minutes (task duration time). This should be done to assure that the most difficult goal is attainable. By conducting some pretests, the researcher found that a student could be able to perform more than 100% improvement in his/her productivity above what he/she has already achieved in the practice trial.

Experimental setting

Each subject selected a date and an hour in which to report for work. The place of work was two private offices located next to each other at Baruch College, CUNY. Subjects reported to the researcher in the first room to get the necessary information for participation and then

went to the next room to work on the task.

The experiment total time and the experiment task duration

The experiment total time ranges from one and a half hours to two hours depending on how long subjects would take to fill out the questionnaire. This included the experimental manipulation, pre-and post-experimental measurements, and two working sessions.

The experimental task duration was only 20 minutes per trial. Most research in goal difficulty has applied experiments of 20 minutes task duration per trial (e.g., Mento et al., 1980; Motowidlo et al., 1978).

However, Steers and Porter (1974) criticized the 20 minute task duration or the "duration of effects" problem inherent in many of the laboratory studies of goal difficulty, as follows:

Most of the laboratory experiments that purported to demonstrate that more difficult goals generally led to better performance than easy goals were carried out over blocks of trials typically averaging 20 minutes or less in duration. It is possible that strong consistent relationship between increased goal difficulty and increased performance resulted in part because trials were not of sufficient duration to allow for the impact of continual negative feedback on the subject (i.e., goal failure)(p. 443).

However, the rationale for applying the 20 minute task duration in this research was as follows:

1. To avoid task boredom since the experimental task applied in this research was a repetitive one.

2. To avoid fatigue and tiredness, especially in the second trial (which is the most important one), since subjects participated in two trials (of 20 minutes each), not just one.

3. To comply with the research budget in terms of money, effort, and time.

In addition, a pretest was run--as explained before--to determine the most difficult goal a subject could achieve in 20 minutes work so the goal level was realistically determined, hence it was attainable. Moreover, subjects were allowed to set their own goals. This should reduce the frustration level involved in the process of attaining the goal since each subject has chosen the goal he/she could attain.

As a result, the "duration of effects" problem inherent in the goal setting laboratory studies may have been avoided in this research according to the above considerations.

Number of trials

Each subject was exposed to two trials, as follows:

1. The practice trial (the pre-testing trial):

After explaining the task to the subject, he/she performed the practice trial where he/she was given the coding task to perform--without any manipulation or measurements of any

kind. The rationale for the practice trial was as follows:

1. To familiarize subjects with the coding task and to reduce their reaction to the experimental setting (i.e., to reduce the Hawthorne effect).

2. To make sure that subjects understand the coding task.

3. To make goal setting more reasonable to the subjects. This was because "merely having them set a goal in their first trial when the experimenter had no idea of their ability to do the task might seem unreasonable to the subjects" (Latham & Curtis, 1973, p. 79).

4. To serve as a measure of ability to perform a given task. Since subjects were randomly assigned to the experimental conditions, as will be explained later, and since they were a homogenous group (i.e., all were undergraduate Baruch College students, having similar age, educational level, and field of study--i.e, Business), the researcher was expecting that no significant differences in ability to perform a given task would exist among the experimental groups. However, the within cells variance of these groups might have been inflated due to wide differences in abilities of the subjects within each group.

Therefore, to control for the ability effects, the researcher eliminated it from the measurement of some dependent variables, as explained before. For example, productivity was calculated to be the difference between

productivity in the practice trial and productivity in the experimental trial, rather than the actual amount of productivity in the experimental trial.

2. The second trial (the experimental trial): After finishing the practice trial work, each subject was randomly assigned to the experimental condition where he/she was exposed to the experimental manipulations and measurements related to the specific condition he/she was assigned to. Therefore, the second trial and subsequent measurements provided the researcher with the necessary information for testing the research hypotheses.

Administrating the covariant measurements

Self-esteem, task-specific-self-esteem, and need-for-money measurements were administered before the manipulation of the experimental variables to eliminate the effect of the manipulation from influencing the covariant variables. According to Locke et al. (1981), one problem with the previous research is that the measurements of personality were given to the subjects after the experimental manipulation and thus might have affected the measurements of personality characteristics under investigation.

Randomization

After finishing the practice trial, each subject was assigned randomly to the experimental conditions. Randomization was done by using the table of random numbers. According to Kerlinger (1973), randomization is the only method of controlling all possible confounding variables. If randomization has been accomplished, then the experimental groups can be considered equal in all possible ways. This can be verified by looking at Table 4. According to Table 4, there were no significant differences among the experimental conditions concerning the pretest measurements (i.e., measurements of self-esteem, productivity in the practice trial, and need for money). It is important to indicate that since subjects are randomly assigned to the experimental conditions, they were admitted individually to each experiment.

Having clarified the above considerations, it is time to explain the experimental procedures. Exhibit 1 shows these procedures. A more detailed explanation of these procedures is reflected in the following steps:

1. As previously explained, an advertisement was placed in the Baruch College student news paper, as well as several places in the college. In addition, the AD was given to the Baruch College faculty members to pass it to their students in their classes, so interested students can write their names and phone numbers so that they can be contacted later by the researcher.

2. When a subject arrived at the experimental setting, the researcher posed as a research assistant hired to analyze information collected from some respondents, and the student was told that opportunity was being given to a

Table 4

**Means and Standard Deviations of the
Covariants and Practice-Trial Productivity
(The Pre-Test Measurements)
The Tukey HSD Test at .05***

Variables	Experimental Conditions	Means	SD	F-Ratio
Rosenberg Self-Esteem Scale	1	27.5652	2.3708	1.276(ns)
	2	27.6087	2.8562	
	3	27.8261	2.3091	
	4	28.8261	1.4350	
	5	27.3478	2.6043	
	6	28.2174	2.2352	
	7	28.3478	2.4792	
	8	28.6087	1.4690	
Coopersmith Self-Esteem Scale	1	47.7391	5.0652	.6536(ns)
	2	49.1739	6.2860	
	3	49.0870	6.2005	
	4	49.6522	3.3657	
	5	49.0870	4.3580	
	6	49.4348	2.7605	
	7	50.6057	4.8311	
	8	48.6087	5.1056	
Task-Specific Self-Esteem Scale	1	30.2609	3.7077	.6611(ns)
	2	30.5652	2.1914	
	3	30.2174	3.0295	
	4	29.9130	3.7040	
	5	29.3478	3.8801	
	6	29.7391	3.5319	
	7	30.3913	3.4607	
	8	31.3043	3.8663	
Need-for- Money Scale	1	3.4348	1.5616	1.085(ns)
	2	2.9130	1.1644	
	3	2.9565	1.0651	
	4	3.0000	1.3143	
	5	2.8261	1.3702	
	6	2.4783	1.1627	
	7	2.6522	1.1912	
	8	2.8261	1.4030	
Productivity in the Practice Trial	1	430.8261	123.1701	.2449(ns)
	2	408.1304	100.8416	
	3	393.8261	103.3136	
	4	420.9565	126.5401	
	5	423.0000	160.5100	
	6	409.4783	99.3355	
	7	428.3478	111.8593	
	8	420.6087	115.1804	

* The Tukey Test Shows that there are no Significant Differences Among the Experimental Groups Concerning Each of the Above Variable.

Exhibit 1

The Order of the Experimental Procedures, Measurements, and Manipulations as Administered to Each Subject

Subject's Arrival to the study site

1. Demographic Variables (Q. 1-8 in the Questionnaire)
 2. Need-For-Money Measure (Q. 9 in the Questionnaire)
 3. Chronic-Self-Esteem Measurements (Q. 10 and Q. 11 in the Questionnaire)
 4. The Practice Trial
 5. Task-Specific-Self-Esteem Measure (Q. 12 in the Questionnaire)
 6. Method-of-Payment Manipulations
 7. Self-Set-Goal Manipulations
 8. Feedback (# of Units Coded in The Practice Trial)
 9. Percentage of Personal Goal (PPG) Choices
 10. Magnitude-of-Personal-Goal (MPG) Measure (Q. 13 in the Questionnaire)
 11. Perceived-Expectancy Measure (Q. 14a and Q. 14b in the Questionnaire)
 12. Perceived-Instrumentality Measure (Q.15a and Q.15b in the Questionnaire)
 13. Perceived-Valences-of-Outcome Measure (Q. 16 in the Questionnaire)
 14. Goal-Commitment Measure (Q. 17 in the Questionnaire)
 15. The Experimental Trial
 16. Check on the Manipulation of self-set-goal conditions: The Subject Was Asked to Rewrite Down His/Her Chosen Goal (PPG) and MPG (Q. 18 in the Questionnaire)
 17. Self-Efficacy Measure (Q. 19 in the Questionnaire)
 18. Feedback (# of Units Coded in the Experimental Trial)
 19. Satisfaction Measurements (Q. 20, Q. 21, and Q. 22 in the Questionnaire)
 20. Check on the Validity of Self-Set-Goal Manipulations (Q. 23 in the Questionnaire)
 21. Check on the Validity of Methods-of-Payment Manipulation (Q. 24 in the Questionnaire)
 22. Check on the Validity of the Experimental Procedures (Q. 25 in the Questionnaire)
 23. Instruction of not Revealing the Experimental Information to Any Person
 24. Reimbursement and Subject Dismissal
-

relatively large number of students to participate in the coding of these information.

In addition, the researcher also explained to the subject that he/she would answer a series of questions related to the coding task which would help the researcher to evaluate the efficiency of the coding task as well as the payment system which he/she was going to be paid under.

Moreover, the researcher informed the subject that his/her responses would be anonymous and confidential, and that his/her participation was voluntary.

3. Having agreed to participate*, the subject was instructed to move to the next room and was given a questionnaire to fill out concerning his/her age, education, year in college, work experience, marital status, sex, income level, and need for money (questions No. 1-9, in the questionnaire, in Appendix A).

4. The subject was then given The chronic self-esteem measurements (i.e., Coopersmith and Rosenberg self-esteem) to fill out (questions No. 10 and 11, in the questionnaire, in Appendix A).

5. The researcher explained the coding task to the subject and made sure that he/she understood the task, and then, he/she participated in the practice trial for 20 minutes.

6. After finishing the practice trial, the subject was given the "task-specific-self-esteem measure" to fill out (question No. 12 in the questionnaire, in Appendix A), while the researcher was calculating his/her productivity in the practice trial.

7. The subject then was randomly assigned to one of the following experimental conditions:

1. Hard-self-set-goal-piece-rate condition.
2. Hard-self-set-goal-hourly-rate condition.
3. Easy-self-set-goal-piece-rate condition.
4. Easy-self-set-goal-hourly-rate condition.
5. Free-choice-self-set-goal-piece-rate condition.
6. Free-choice-self-set-goal-hourly-rate condition.
7. No-goal-piece-rate condition.
8. No-goal-hourly-rate condition.

* Three students refused to participate in the experiment and were allowed to leave.

8. According to the specific experimental condition to which the subject was assigned, he/she was given the manipulation of self-set goal and/or methods of payment, as well as feedback about how much items were coded(*) in the practice trial.

9. The subject was asked to set his/her goal in terms of percent improvement in productivity above his/her productivity in the practice trial. He/she then was asked to write down his/her chosen goal and then was asked to evaluate that goal in terms of difficulty (question No. 13 in the questionnaire in Appendix A).

10. The subject was given the measurements of expectancy, instrumentality, valence, and goal commitment to fill out (questions No. 14a, 14b, 15a, 15b, 16, 17, respectively, in the questionnaire in appendix A).

11. After collecting these measurements, the subject was allowed to perform the experimental trial for 20 minutes.

12. After completing the experimental trial, the subject was asked to remember and rewrite down his/her goal in terms of percent improvement in productivity, and also to re-evaluate that goal again in terms of difficulty (question No. 18 in the questionnaire in Appendix A). This was done, as explained before, to assure that the subject has kept his/her goal in mind while performing the experimental task.

13. The subject was given the self-efficacy scale to fill out while the researcher was calculating the number of items coded in the experimental trial (question No. 19 in the questionnaire, in Appendix A).

14. Upon completion of the self-efficacy scale, the subject was given feedback about the number of items coded in the experimental trial*, then he/she was given the

(*) Students in the "no goal" condition were not given feedback about their performance in the practice trial to avoid any possibility of setting goals on their part.

* This feedback was given to subjects working under the experimental conditions 1, 3, 5, 7 where piece-rate plans have been applied in order for them to know their earnings since under hourly plans subjects know their earnings in advance. The reason for that is to reflect the effect of the amount of money received on the measurements of satisfaction.

measurement of satisfaction to fill out (questions No. 20, 21, 22 in the questionnaire in Appendix A).

15. Upon completion of the measurements of satisfaction, the subject was given questions that were designed to check on the validity of the following: self-set-goal condition, methods of payment, and the experimental procedures (questions No. 23, 24, 25, respectively, in the questionnaire, in Appendix A).

16. The researcher thanked the subject for participation, and gave him/her the money, and asked him/her not to reveal any information regarding what happened in the experiment to anyone.

Data analysis

The data were analyzed using the SPSS-X (SPSS-X user's guide, 1988). Frequency distributions were examined for all variables. Descriptive statistical summaries were obtained for all appropriate variables. Alpha reliability coefficients were calculated for each measure--where appropriate--and reported with the measure's mean and standard deviation (see Table 3). Pearson product moment correlations among variables were performed and examined for multicollinearity. Table A (in Appendix B) includes the intercorrelation matrix for the quantitative variables. Examining Table A reveals that no major multicollinearity problems were found, except that the measure of goal attainment was found to have a very high significant correlation ($r = -.70$, $p = .000$) with percentage of personal goal.

The predominant types of statistical analyses that were used in testing the study's hypotheses included: Test

of significant main and interactive effects--i.e., analysis of variance (ANOVA) and multivariate analysis of variance (MANOVA), test of multiple comparison (i.e., Tukey honestly significant difference and Scheffe tests), analysis of the simple effects, subgroup analysis, contrast analysis, Pearson correlation, and partial correlation. As per a social science research tradition, an alpha level of .05 was set throughout as a required level of significance.

The criterion used for blocking subjects into subgroups (i.e., high and low on personality characteristics) was whether subjects score above or below the mean of the personality variable under investigation.

The statistical methods used for testing the research hypotheses are described below:

The first step in the analysis was the check on the validity of the experimental manipulations. A check on the manipulation was assessed through the analysis of the scale items that were designed for that purpose, as well as the analysis of the dependent variables to determine whether the manipulations have their intended effects. The analysis of variance, as well as the frequency distribution were used to assess the validity of the manipulations.

The research Hypotheses were tested by applying the procedure suggested by Keppel (1982). This procedure is outlined in Figure 7.

To test Hypothesis 1, the following procedures were

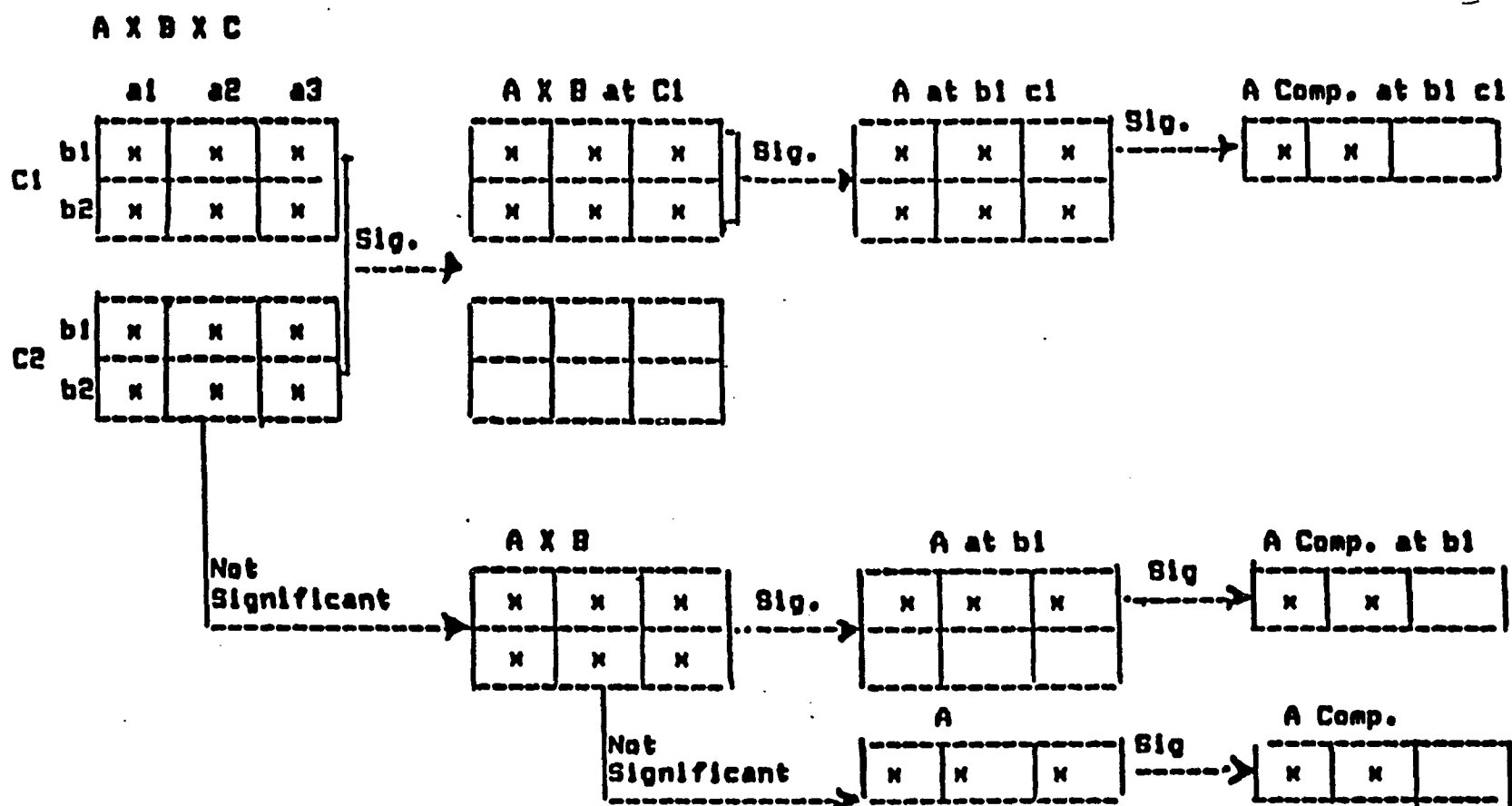


Figure 7. Systematic Analysis of Simple Effects (Keppel, 1982)

applied:

Testing the significance of the three-way interaction:

Hypothesis 1 deals with the impact of the interaction of self-set-goal conditions, methods of payment, and self-esteem on personal goal choice. A significant three-way interaction is present when the interaction between two of the independent variables is not the same at all levels of the third variable (Keppel, 1982). That is, the researcher hypothesized that variations in personal goal between self-set goal and methods of payment conditions should not be the same for high and for low self-esteem subjects.

According to Keppel (1982), the significance of the three-way interaction should first be assessed. To test for this interaction, the researcher applied the multivariate analysis of variance (MANOVA). MANOVA has the unique capacity for testing significant interactions between the manipulated independent variables and the covariants (SPSS-X User's Guide, 1988). Thus, MANOVA performs all the possible interactions (i.e., the three-way, and the two-way interactions, as well as the main effects)

If, according to MANOVA, the three-way interaction was found to be significant, then, according to Keppel (1982), the next step in the analysis is to perform the simple interactive effect. Analysis of the simple interactive

effect is an analysis of the interaction of two of the independent variables at each level of the third variable (Keppel, 1982).

Therefore, variation in personal goal due to the interaction between methods of payment and self-set-goal conditions was conducted at each level of self-esteem using the analysis of variance. If no significant variations in personal goals between methods of payment and self-set-goal conditions were found, then the analysis was stopped since no further information was expected to be gained by further analysis.

If, on the other hand, the simple interactive effect was found to be significant, then the next step was to study the simple effect which is the variation in personal goal among self-set-goal conditions at each level of methods of payment, and at each level of self-esteem.

If again the analysis revealed that this simple effect is significant, then the next step was to search for significant simple comparisons. This analysis involved, for example, the study of the significant differences in personal goal between the hard-goal and easy-goal conditions under the piece-rate plans for high-self-esteem subjects. This step may also be repeated under the hourly plans depending on the requirements of the analysis.

In addition, another analysis of the simple effect was done to test for the "self-esteem effect." Self-esteem

effect was tested by examining the significant differences in personal goal between high- and low-self-esteem subjects at each experimental condition. This was done since the researcher expected that there will be a significantly higher personal goal set by high- self-esteem subjects at all the experimental conditions than the personal goal set by low-self-esteem subjects.

In short, the objectives of the previous procedures was to slice the ABC factorial design into small pieces to locate the factor (or factors) that are responsible for the significant three-way interaction (Keppel, 1982).

Testing the significance of the two-way interaction:

The lack of a significant three-way interaction means that the result of the experiment can be completely described in terms of the two-way interaction (Keppel, 1982). Significant two-way interaction means that the effect of one independent variable on the dependent variable is not the same at all levels of the another independent variable (Keppel, 1982).

Testing the significant two-way interaction was done by applying either ANOVA or MANOVA, depending on the variables under investigation.

If MANOVA showed that the two-way interaction (i.e., self-esteem by either methods of payment or self-set-goal conditions) was significant, then the next step was to

conduct the simple effect. For example, if a significant two-way interaction between self-esteem and self-set-goal conditions was significant, then the next step is to study the significant variation in personal goal among self-set-goal conditions at each level of self-esteem.

If this simple effect was found to be significant, then the next step is to perform the simple comparison by examining, for example, the significant differences in personal goal between the hard- and easy-goal conditions at each level of self-esteem. In addition, the "effect of self-esteem" was also assessed by studying the significant differences in personal goal between high and low self-esteem subjects at each self-set-goal condition.

If, according to MANOVA, there was no significant factor by covariant interaction, then the next step was to test for the significant factor by factor interaction (i.e., methods of payment by self-set-goal conditions--the manipulated variables) by using ANOVA. "ANOVA performs analysis of variance for factorial design, with the default being the full factorial model" (SPSS-X User's Guide, 1988).

If ANOVA showed that there is a significant two-way interaction of methods of payment and self-set-goal conditions in influencing personal goal, then the next step was to conduct the simple effect. That is, examining the variation in personal goal among goal conditions at each

level of methods of payment (i.e., piece-rate plans and hourly-flat-rate plans), separately. If this simple effect was found to be significant, then the next step was to conduct the simple comparison by examining, for example, the significant differences in personal goal between the hard-goal and easy-goal conditions.

Another useful analysis was also conducted by examining the "methods of payment effect." The methods of payment effect was done by examining the significant differences in personal goal between the piece-rate plans and hourly-flat-rate plans at each goal condition. This was done since Hypothesis 1 implies that personal goal should be set higher under the piece-rate plans at all self-set-goal conditions than personal goal set under hourly plans.

Testing the significance of the main effect

The final stage in the procedures took place when the two-way interaction was not significant. Accordingly, the main effect of the independent variables should be the target (Keppel, 1982). Significant main effect was tested using ANOVA. If the main effect was found to be significant, then the next step was to test for the simple comparison. For example if significant goal-condition effects were found, then the next step was to examine significant differences in personal goal between the hard-

goal and easy-goal conditions, or between the hard-goal and free-choice-goal conditions.

In addition, several correlations regarding the relationship between personal goal and all the dependent variables were assessed, taking into consideration the effect of self-esteem to investigate its moderating effect on these relationships. If, for example, the relationship between personal goal and productivity was found to be significant only for high-self-esteem subjects, and this correlation was significantly higher for those subjects than equivalent correlation for low-self-esteem subjects (see Zedeck, 1971), then the researcher concluded that self-esteem moderates the relationship between personal goal and productivity. Significant differences between subgroup correlations regarding the predictor and criterion variables were tested by the difference in Fisher's Zs (see Guilford, 1965). In addition, the moderating effect of either methods of payment, or self-set-goal conditions on the relationship between personal goal and some dependent variables was also examined in the same way as above, where appropriate.

Testing the significant differences among the experimental groups (multiple range and contrast tests)

In testing either the simple effect or the simple comparison, the researcher applied three tests. These

tests were the Tukey HSD (honestly significant difference), the Scheffe test, and the contrast test.

Both the Tukey and the Scheffe tests are capable of performing all pairwise comparisons. Those two tests were chosen because of their ability to control the family wise (FW) error rate. To clarify, when several comparisons are made in testing of an experiment, there is a family wise error rate which increases directly with the number of comparisons (Keppel, 1982). The family wise error rate is the probability that a set of comparison will contain one or more type I error. Type I error is the probability of rejecting the null hypothesis while it is true. This probability is .05 for each of the separate comparison (Keppel, 1982).

Therefore, the Tukey and the Scheffe* tests are the best multiple range tests in the literature because of their ability to keep the family wise error rate at a particular value (usually .05), regardless of the number of comparisons involved in the analysis.

The Scheffe test is appropriate for performing all possible linear combinations of groups means, not just pairwise, and it is stricter than the Tukey HSD test.

The Scheffe test was used in this research, where the sample size of the cells was not equal, whereas the Tukey

* For calculation see Berenson & Levine (1986) & Keppel (1982).

test was used where the sample size of the groups was equal. This is because when the sample size is not equal, the results obtained by the Tukey test are approximate, whereas those obtained by the Scheffe test are exact (Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975). The Scheffe test has the ability to analyze groups of unequal sample size because of its ability to handle all the possible combinations of comparisons among groups, not just the pairwise comparison, as explained before.

In testing the simple comparison, the researcher has applied an additional test called the contrast test. The contrast test is a T-Test which assesses the significant differences between the personal goal means of two experimental groups. The experimental groups were determined by dummy coding of the various conditions. This test was applied because of its greater ability to detect the significant differences between two group means than the Scheffe test, especially when the variance among groups is unequal. Therefore, whenever the contrast test yielded different results than those obtained by the Scheffe test, the researcher reported the results of both tests. When both yielded similar results, only the results obtained by the Scheffe test were reported. This should have contributed to increasing the validity of the research results.

Hypotheses 2 and 4 followed the same procedures and

analyses explained for Hypothesis 1, with the exception that the dependent variables in Hypothesis 2 were productivity, goal attainment, and satisfaction, whereas the dependent variable in Hypothesis 4 was the perceived valences of job performance.

Hypothesis 3A and 3B, however, followed the procedures of Hypothesis 1 regarding the two-way interaction with the exception that the dependent variable in Hypothesis 3 was the expectancy. Hypothesis 3C, however, was tested by conducting the correlation between personal goal and expectancy, and between expectancy and productivity at each goal condition and for high and for low self-esteem subjects.

CHAPTER 5

RESULTS

Checking the validity of the experimental manipulations

The first step in the analysis is to check the validity of the experimental manipulations. Two variables are manipulated experimentally. These variables are:

1. Methods of payment.
2. Self-set-goal conditions.

Validity is defined by the researcher to be the extent to which subjects understand the manipulations of methods of payment and self-set-goal conditions. If 90% of the subjects understand the manipulation of each of these variables, then the manipulation would be considered to be valid.

1. Checking the validity of the manipulation of methods of payment

To check the validity of the manipulation of methods of payment, all subjects were given the following instruction: "Describe the payment system being applied to you." This instruction has two alternatives for subjects to choose from:

1. Piece-rate plans.
2. Hourly-flat-rate plans.

Subjects were asked to check the alternative that perfectly describes the payment system being applied to them. Eighty-eight subjects (out of 92) under the piece-rate plan manipulation checked No. 1 (piece-rate plans). Similarly, 87 subjects (out of 92) under the manipulation of hourly-flat-rate plans checked No. 2 (hourly-flat-rate plans). Since each group contained more than 90% correct responses, it can be concluded that the manipulation of methods of payment was valid.

In addition, analysis of variance shows that subjects produce significantly ($P = .005$) higher amounts under the application of piece-rate plans than under the application of hourly-flat-rate plans. Also, analysis of variance shows that subjects set significantly ($P = .003$) more difficult goals under piece-rate plans than under hourly-flat-rate plans. Furthermore, subjects reported positively significantly higher perception of instrumentality (performance-monetary reward relationship), and of overall satisfaction, under the application of piece-rate plans than under the application of hourly plans. Table 5 shows these results.

2. Checking the validity of the manipulation of self-set-goal conditions

To check the validity of the manipulation of self-set-goal conditions, subjects were given the following

Table 5

The Main Effects of Methods of Payment
on the Dependent Variables

Dependent Variables	Group	N	Means	SD	F-Ratio
Productivity	1. Piece-rate	92	172.3261	98.9853	8.3122 **
	2. Hourly-rate	92	131.3043	93.9523	
Percentage of Personal Goal	1. Piece-rate	69	44.2174	36.1056	2.4445
	2. Hourly-rate	69	35.3333	30.4016	
Magnitude of Personal Goal	1. Piece-rate	69	4.3188	1.3557	9.0042 **
	2. Hourly-rate	69	3.5942	1.4785	
Goal Commitment	1. Piece-rate	69	46.3765	8.4298	.1004
	2. Hourly-rate	69	45.9420	7.6752	
Goal Attainment(*)	1. Piece-rate	69	16.1175	187.2550	.1717
	2. Hourly-rate	69	4.8571	126.0618	
Overall Satisfaction	1. Piece-rate	92	63.3043	11.9741	4.4525 *
	2. Hourly-rate	92	59.7609	10.7727	
Overall Job Satisfaction	1. Piece-rate	92	13.6196	4.0188	1.0567
	2. Hourly-rate	92	12.8152	3.5763	
Satisfaction with Pay	1. Piece-rate	92	10.5870	3.0532	2.3213
	2. Hourly-rate	92	9.4783	2.3156	
Satisfaction with Work	1. Piece-rate	92	33.8913	7.0764	2.3467
	2. Hourly-rate	92	32.2935	7.0719	
Satisfaction with Methods of Payment	1. Piece-rate	92	5.2065	1.4261	6.2285 *
	2. Hourly-rate	92	4.6739	1.4684	
Perceived Expectancy	1. Piece-rate	92	9.0652	1.8145	.0243
	2. Hourly-rate	92	9.1087	1.9637	
Perceived Total Valences of Job Performance	1. Piece-rate	92	552.7717	263.6748	2.2113
	2. Hourly-rate	92	500.5652	209.4542	

Table 5 (Continued)

Dependent variables	Groups	N	Means	SD	F-Ratio
Perceived Valences of Job Performance (Money)	1. Piece-rate	92	39.8696	17.6562	***
	2. Hourly-rate	92	29.5000	18.0259	15.5379
Perceived Valences of Job Performance (Pride)	1. Piece-rate	92	39.9674	19.2921	
	2. Hourly-rate	92	42.2500	18.1505	.6832
Perceived Valences of Job Performance (Entertainment)	1. Piece-rate	92	23.4130	16.0693	
	2. Hourly-rate	92	23.1957	18.3016	.0073
Perceived Valences of Job Performance (Boredom)	1. Piece-rate	92	37.5217	57.7713	
	2. Hourly-rate	92	34.3478	19.8125	.2483
Perceived Total Valences of Performance Outcomes	1. Piece-rate	92	17.7935	4.1542	
	2. Hourly-rate	92	18.3696	3.7496	.9754
Perceived Valences of Money	1. Piece-rate	92	4.2826	1.4996	
	2. Hourly-rate	92	4.5326	1.3380	1.4236
Perceived Valences of Pride	1. Piece-rate	92	4.5217	1.5582	
	2. Hourly-rate	92	4.8804	1.2390	2.9868
Perceived Valences of Entertainment	1. Piece-rate	92	3.8152	1.3980	
	2. Hourly-rate	92	3.8043	1.6595	.0023
Perceived Valences of Boredom	1. Piece-rate	92	5.1739	1.1824	
	2. Hourly-rate	92	5.1522	1.2747	.0144

Table 5 (Continued)

Dependent Variables	Groups	N	Means	SD	F-Ratio
Perceived Total Instrumentality of Performance to Rewards	1. Piece-rate 2. Hourly-rate	92 92	30.4022 26.6630	11.6062 8.0168	* 6.4645
Perceived Instrumentality of Performance to Money	1. Piece-rate 2. Hourly-rate	92 92	9.2500 6.3478	2.2268 3.3527	*** 47.8347
Perceived Instrumentality of Performance to Pride	1. Piece-rate 2. Hourly-rate	92 92	8.4022 8.3370	2.6105 2.6490	.0283
Perceived Instrumentality of Performance to Entertainment	1. Piece-rate 2. Hourly-rate	92 92	5.7933 5.4130	3.0654 2.9507	.7355
Perceived Instrumentality of Performance to Boredom (**)	1. Piece-rate 2. Hourly-rate	92 92	6.9565 6.5652	9.5445 3.1876	.1391
Force (Valences of Job Performance X Expectancy)	1. Piece-rate 2. Hourly-rate	92 92	4990.07 4686.51	2314.4474 2331.5831	.7855
Strength of Self-Efficacy	1. Piece-rate 2. Hourly-rate	92 92	68.6304 69.0326	18.2231 20.3920	.0199
Magnitude of Self-Efficacy	1. Piece-rate 2. Hourly-rate	92 92	6.2609 5.9891	2.4623 2.5784	.5344

(*) Because of The Unequal Variance Between Groups, T-Test Was Also Conducted. T-Value (Separate Variance Estimate) Was Found to be .41, and Two Tail Probability Was Found to be .679.

(**) Because of The Unequal Variance Between Groups, T-Test Was Also Conducted. T-Value (Separate Variance Estimate) Was Found to be .37, and Two Tail Probability Was Found to be .710.

*p<.05
**p<.01
***p<.001

instruction in all the experimental conditions: "Describe the goal instructions being given to you." Then subjects were given the following alternatives to choose from:

1. I have been instructed to set a hard goal.
2. I have been instructed to set an easy goal.
3. I have been instructed to set any goal.
4. I have not been instructed to set a goal.

The results show that, in hard-goal conditions, 42 subjects (out of 46) checked No. 1 (hard-goal instruction). In easy-goal conditions, 42 subjects (out of 46) checked No. 2 (easy-goal instruction). In free-choice-goal conditions, 43 subjects (out of 46) checked No. 3 (free-choice-goal instruction). Finally, in no-goal conditions, 44 subjects (out of 46) checked No. 4 (no instructions to set goals). Again, since each group contained more than 90% correct responses, this shows that the manipulation of self-set-goal conditions was valid.

3. Further checks

Directly after the manipulation of methods of payment and goal conditions (and before working on the experimental task), subjects in all goal conditions were asked to write down their chosen goals. This was done for two reasons: First, to offer an additional check on the validity of goal manipulation. Second, to help the researcher validate later that subjects have kept their targeted goals without

change during their work on the experimental task. In this regard, subjects were asked to report two kinds of goals, as follows:

1. Their goal in percentage terms, i.e., their goals as percentage improvements in productivity over what they had already achieved in the practice trial.

2. The magnitude of their goals, i.e., how difficult their goals are (see question 13 in the questionnaire in Appendix A). Table 6 shows that 27 (out of 46) subjects in hard-goal conditions chose a hard goal ranging from somewhat difficult to very difficult. In addition, while only 3 subjects (out of 46) in easy-goal conditions chose somewhat difficult goals, 14 subjects (out of 46) in free-choice-goal conditions chose difficult goals. Table 6, therefore, shows that the manipulations of self-set-goal condition were valid since most subjects in the hard-goal condition chose hard goals, most subjects in the easy-goal condition chose easy goals, and most subjects in the free-choice-goal condition chose goals that were neither easy, nor difficult.

Further, analysis of variance shows that self-set-goal conditions showed significant ($p < .001$) main effects on subjects' choices of percentage of personal goal and magnitude of personal goal. Table 7 shows that--according to Tukey's HSD (Honestly Significant Difference) at the .050 level--the percentage of personal goal is

Table 6
The Frequency Distribution of Magnitude
of Personal Goal (MPG) in each Experimental Conditions

[illegible]

Table 7

Tukey (HSD) Multiple Range Test at the 0.05 Level
For Testing the Main Effects of Self-Set-Goal
Conditions on the Dependent variables

Dependent Variables	N	Means	SD	Groups	F-Ratio
				G4 G2 G3 G1	
Productivity	46	92.7174	83.0290	No Goal(4)	***
	46	148.6957	87.0874	Easy G.(2)(*)	10.5
	46	170.4783	101.5191	Free G.(3)(*)	
	46	159.3696	93.4070	Hard G.(1)(*)	
Percentage of Personal Goal (PPG)	46	29.0435	33.8756	Easy G.(2)	*
	46	40.3696	35.5624	Free G.(3)	4.7
	46	49.9130	28.1368	Hard G.(1) (*)	
Magnitude of Personal Goal (MPG)	46	2.8043	1.0248	Easy G.(2)	***
	46	4.1087	1.1001	Free G.(3) (*)	39.75
	46	4.9565	1.3492	Hard G.(1) (*) (*)	
Goal Commitment	46	47.4130	7.9988	Hard G.(1)	
	46	45.7174	7.4704	Easy G.(2)	.8624
	46	45.3478	8.6184	Free G.(3)	
Goal Attainment	46	-4.8365	122.5760	Hard G.(1)	
	46	24.1513	202.6973	Easy G.(2)	.3819
	46	12.1472	143.3610	Free G.(3)	
Overall Satisfaction	46	62.9130	11.7262	Hard G.(1)	
	46	60.2174	10.9644	Easy G.(2)	.9432
	46	60.000	10.5008	Free G.(3)	
	46	63.000	12.6947	No Goal(4)	
Overall Job Satisfaction	46	13.4783	3.8166	Hard G.(1)	
	46	12.9348	3.5988	Easy G.(2)	.5705
	46	12.7826	3.7530	Free G.(3)	
	46	13.6739	4.1261	No Goal(4)	
Satisfaction with Work	46	33.7826	7.3118	Hard G.(1)	
	46	32.2826	7.1575	Easy G.(2)	.6371
	46	32.4565	6.7846	Free G.(3)	
	46	33.8478	7.2202	No Goal(4)	
Satisfaction with Methods of Payment	46	5.0217	1.6531	Hard G.(1)	
	46	4.7826	1.3648	Easy G.(2)	.2416
	46	4.9783	1.3415	Free G.(3)	
	46	4.9783	1.5274	No Goal(4)	

Table 7 (Continued)

Dependent Variables	N	Means	SD	Groups	F-Ratio			
					G1	G2	G3	G4
Perceived Expectancy	46	9.0652	2.1746	Hard G.(1)				*
	46	8.7826	1.8728	Easy G.(2)				2.9753
	46	8.7391	2.1441	Free G.(3)				
	46	9.7609	.9703	No Goal(4)			(*)	
Perceived Total	46	529.2174	211.8976	Hard G.(1)				
	46	559.2826	319.0939	Easy G.(2)				.4514
Valences of job	46	510.9565	208.3525	Free G.(3)				
Performance	46	507.2174	200.5783	No Goal(4)				
Perceived Valences of Job	46	34.6087	17.7131	Hard G.(1)				
	46	35.2391	16.7825	Easy G.(2)				.3457
	46	32.5217	21.0277	Free G.(3)				
Performance (money)	46	36.3696	18.7573	No Goal(4)				
Perceived Valences of Job	46	43.6739	19.3667	Hard G.(1)				
	46	39.7826	18.5256	Easy G.(2)				.4960
	46	39.4130	19.5443	Free G.(3)				
Performance (Pride)	46	41.5652	17.6706	No Goal(4)				
Perceived Valences of Job	46	22.7826	17.5355	Hard G.(1)				
	46	24.2609	18.0781	Easy G.(2)				.1036
	46	22.4783	17.4836	Free G.(3)				
Performance (Entertainment)	46	23.6957	16.0470	No Goal(4)				
Perceived Valences of job	46	33.5435	19.7740	Hard G.(1)				
	46	45.3043	79.1401	Easy G.(2)				1.5712
	46	38.3913	20.5063	Free G.(3)				
Performance (boredom)	46	26.5000	16.9086	No Goal(4)				
Perceived Total	46	19.1087	3.7667	Hard G.(1)				
	46	18.3478	3.8019	Easy G.(2)				1.9530
Valences of Outcomes	46	17.4348	3.9365	Free G.(3)				
	46	17.4348	3.1828	No Goal(4)				
Perceived Valences of Money	46	4.7174	1.2232	Hard G.(1)				
	46	4.4783	1.3620	Easy G.(2)				1.4377
	46	4.1304	1.6001	Free G.(3)				
	46	4.3043	1.4586	No Goal(4)				

Table 7 (Continued)

Dependent Variables	N	Means	SD	Groups	F-Ratio			
					G1	G2	G3	G4
Perceived Valences of Pride	46	4.9130	1.4271	Hard G.(1)				
	46	4.7609	1.3027	Easy G.(2)				.7667
	46	4.4783	1.6019	Free G.(3)				
	46	4.6522	1.3202	No Goal(4)				
Perceived Valences of Entertainment	46	4.0435	1.6594	Hard G.(1)				
	46	3.9348	1.4667	Easy G.(2)				1.1064
	46	3.5000	1.5599	Free G.(3)				
	46	3.7609	1.4171	No Goal(4)				
Perceived Valences of Boredom	46	5.4348	1.0467	Hard G.(1)			(*)	*
	46	5.1739	1.1982	Easy G.(2)				3.1592
	46	5.3261	1.0340	Free G.(3)				
	46	4.7174	1.4857	No Goal(4)				
Perceived Total Instrumentality of Performance-Rewards Relationship	46	27.2391	8.2682	Hard G.(1)				
	46	29.7391	14.8973	Easy G.(2)				.4676
	46	28.6739	8.1814	Free G.(3)				
	46	28.4783	7.4944	No Goal(4)				
Perceived Instrumentality of performance-Money Relationship	46	7.3261	3.0627	Hard G.(1)				
	46	7.9348	2.9470	Easy G.(2)				.8360
	46	7.6087	3.6422	Free G.(3)				
	46	8.3261	3.0772	No Goal(4)				
perceived Instrumentality of performance-Pride Relationship	46	8.5652	2.6217	Hard G.(1)				
	46	7.9130	2.7954	Easy G.(2)				.7575
	46	8.3261	2.7813	Free G.(3)				
	46	8.6739	2.2809	No Goal(4)				
Perceived Instrumentality of Performance-Entertainment Relationship	46	5.1957	2.8254	Hard G.(1)				
	46	5.5870	3.3637	Easy G.(2)				.4984
	46	5.7639	3.0627	Free G.(3)				
	46	5.9565	2.7885	No Goal(4)				

Table 7 (Continued)

Dependent Variables	N	Means	SD	Groups	F-Ratio			
					G1	G2	G3	G4
Perceived Instrument-ality of Performance-Boredom relationship	46	6.1522	3.2861	Hard G.(1)				
	46	8.3043	3.0960	Easy G.(2)				1.3405
	46	7.0652	3.2687	Free G.(3)				
	46	5.5217	2.7304	No Goal(4)				
Force (Valences of Job Performance X Expectancy)	46	4876.85	2318.32	Hard G.(1)				
	46	4894.30	2530.27	Easy G.(2)				.2041
	46	4610.20	2377.99	Free G.(3)				
	46	4971.83	2100.50	No Goal(4)				
Strength of Self-Efficacy	46	72.0870	15.3620	Hard G.(1)				
	46	67.9348	20.9618	Easy G.(2)				.6991
	46	66.4565	22.1497	Free G.(3)				
	46	68.8478	18.1430	No Goal(4)				
Magnitude of Self-Efficacy	46	6.7609	2.3962	Hard G.(1)				
	46	5.7609	2.4238	Easy G.(2)				1.4258
	46	5.9130	2.9652	Free G.(3)				
	46	6.0652	2.1848	No Goal(4)				
Strength of Self-Efficacy at an Easy Level of Performance	46	10.4891	.6346	Hard G.(1)		(*)		*
	46	9.7500	1.6799	Easy G.(2)				3.2810
	46	9.6739	1.8234	Free G.(3)				
	46	10.1304	1.1782	No Goal(4)				
Strength of Self-Efficacy at a Moderate level of Performance	46	6.6667	2.6256	Hard G.(1)				
	46	5.7536	2.9577	Easy G.(2)				1.2283
	46	5.6159	3.1887	Free G.(3)				
	46	5.9855	2.6048	No Goal(4)				
Strength of Self-Efficacy at a Difficult Level of Performance	46	3.0435	2.4102	Hard G.(1)				
	46	3.4239	2.6225	Easy G.(2)				.2542
	46	3.2444	2.5863	Free G.(3)				
	46	3.0217	2.5494	No Goal(4)				
Strength of Self-Efficacy at a Very Difficult Level of Performance	46	2.0217	1.9663	Hard G.(1)				
	46	2.4130	2.0583	Easy G.(2)				.3086
	46	2.2391	1.8995	Free G.(3)				
	46	2.1630	2.0332	No Goal(4)				

(*) Denotes Pairs of Groups Significantly Different at The 0.05 Level

*p<.05
 **p<.01
 ***p<.001

significantly higher in hard-goal conditions than in easy-goal conditions. Table 7 shows also that the magnitude of personal goal is significantly higher under the hard-goal conditions than under either the easy, or free-goal conditions. In addition, Table 7 shows that productivity means are in the expected direction (i.e., productivity means in the hard-goal conditions are higher than those in easy, free-choice, or no-goal conditions). Moreover, productivity means were significantly higher in the hard goal, free-choice, and easy-goal conditions, compared individually to the no-goal condition.

Directly after finishing the experimental task, subjects were asked to re-report their previously chosen goals, both in percentage improvement and magnitude (degree of difficulty). This was done, as explained before, to assure that subjects had kept their goals in mind while working on the experimental task. This would allow the researcher to make an inference that goals did influence subjects' productivity and other dependent variables such as goal attainment.

The correlation between percentage of personal goal before and after working on the experimental task was very high and significant ($r = .97$; $p < .001$). In addition, the correlation between the magnitude of personal goal before and after working on the experimental task was also very high and significant ($r = .86$; $p < .001$). These results

show that subjects maintained their goals while working on the experimental task.

4. Checking the validity of the experimental manipulation after removing those subjects who did not understand either the manipulation of methods of payment, or self-set-goal conditions

Further analysis was conducted to prove that removal of those subjects who did not understand the manipulation of the experimental variables has no effect on the validity of these variables. In this regard, Table 8 and Table 9 show the results after the removal of those subjects from the analysis. Table 8 shows that the removal of those subjects who did not understand the manipulation of methods of payment has no effect on the results reported on Table 5 regarding the dependent variables except the overall satisfaction. The effect of methods of payment on overall satisfaction becomes marginally insignificant ($p = .06$) in Table 8, as compared to Table 5 ($p < .05$).

Table 9 shows that removal of those subjects who did not understand the manipulation of self-set-goal conditions has no effect on the results reported in Table 7 regarding the dependent variables except valences of boredom and perceived self-efficacy strength (SES) at a very easy level of performance. The effects of self-set-goal conditions on those two variables become stronger. That is, concerning

Table 8

The Main Effects of Methods of Payment (MP)
on the Dependent Variables
After Removing those Subjects Who Did Not
Understand the MP Manipulations

Dependent Variables	Groups	N	Means	SD	F-Ratio
Productivity	1. Piece-rate 2. Hourly-rate	91 88	170.8132 133.4886	98.458 94.662	** 6.6714
Percentage of Personal Goal	1. Piece-rate 2. Hourly-rate	68 65	44.1324 35.3538	36.367 30.708	2.2522
Magnitude of Personal Goal	1. Piece-rate 2. Hourly-rate	68 65	4.3382 3.6615	1.356 1.492	** 7.5010
Goal Commitment	1. Piece-rate 2. Hourly-rate	68 65	46.2500 45.5846	8.426 7.609	.0362
Goal Attainment	1. Piece-rate 2. Hourly-rate	68 65	13.9896 10.0345	187.803 124.725	.0202
Overall Satisfaction	1. Piece-rate 2. Hourly-rate	91 88	63.1648 59.9659	11.965 10.937	(*) 3.4790
Overall Job Satisfaction	1. Piece-rate 2. Hourly-rate	91 88	13.5385 12.8523	3.9646 3.6311	1.4555
Satisfaction with Pay	1. Piece-rate 2. Hourly-rate	91 88	10.5495 10.0795	3.0487 2.2653	1.3628
Satisfaction with Work	1. Piece-rate 2. Hourly-rate	91 88	33.8901 32.3295	7.1156 7.1883	2.1303
Satisfaction with Methods of Payment	1. Piece-rate 2. hourly-rate	91 88	5.1868 4.7045	1.4214 1.4634	* 5.0027
Perceived Expectancy	1. Piece-rate 2. Hourly-rate	91 88	9.0659 9.0909	1.825 2.004	.0076

Table 8 (Continued)

Dependent Variables	Groups	N	Means	SD	F-Ratio
Perceived Total Valences of Job Performance	1. Piece-rate 2. Hourly-rate	91 88	549.2418 496.9545	262.941 211.457	2.1408
Perceived Valences of Job Performance (Money)	1. Piece-rate 2. Hourly-rate	91 88	39.5824 29.4205	17.5367 18.1271	*** 14.5330
Perceived Valences of Job Performance (Pride)	1. Piece-rate 2. Hourly-rate	91 88	39.6813 42.4432	19.2018 18.3152	.9685
Perceived Valences of Job Performance (Entertainment)	1. Piece-rate 2. Hourly-rate	91 88	23.1209 22.8409	15.9107 18.5985	.0117
Perceived Valences of Job Performance (Boredom)	1. Piece-rate 2. Hourly-rate	91 88	37.5358 33.9205	58.0912 19.9996	.3062
Perceived Total Valences of Performance Outcomes	1. Piece-rate 2. Hourly-rate	91 88	17.7363 18.3182	4.139 3.801	.9581
Perceived Valences of Money	1. Piece-rate 2. Hourly-rate	91 88	4.2623 4.5227	1.4969 1.3644	1.4607
Perceived Valences of Pride	1. Piece-rate 2. Hourly-rate	91 88	4.5055 4.8864	1.5590 1.2358	3.2669
Perceived Valences of Entertainment	1. Piece-rate 2. Hourly-rate	91 88	3.8022 3.7614	1.4002 1.6815	.0313

Table 8 (Continued)

Dependent Variables	Groups	N	Means	SD	F-Ratio
Perceived Valences of Boredom	1. Piece-rate	91	5.1648	1.1857	
	2. Hourly-rate	88	5.1477	1.2813	.0085
Perceived Total Instrumentality of Performance to Rewards	1. Piece-rate	91	30.3187	11.643	***
	2. Hourly-rate	88	26.5341	8.107	6.3300
Perceived Instrumentality of Performance to Money	1. Piece-rate	91	9.2308	2.2315	***
	2. Hourly-rate	88	6.3295	3.3457	46.8846 of
Perceived Instrumentality of Performance to Pride	1. Piece-rate	91	8.3736	2.610	
	2. Hourly-rate	88	8.3523	2.691	.0029
Perceived Instrumentality of Performance to Entertainment	1. Piece-rate	91	5.7473	3.0499	
	2. Hourly-rate	88	5.3636	3.0026	.7186
Perceived Instrumentality of Performance to Boredom	1. Piece-rate	91	6.9670	9.5968	
	2. Hourly-rate	88	6.4886	3.2163	.1972
Force (Valences of Job Performance X Expectancy)	1. Piece-rate	91	4958.47	2307.22	
	2. Hourly-rate	88	4648.44	2358.20	.7904
Strength of Self-Efficacy	1. Piece-rate	91	68.6044	18.3223	
	2. Hourly-rate	88	68.8523	20.6189	.0072
Magnitude of Self-Efficacy	1. Piece-rate	91	6.2747	2.4724	
	2. Hourly-rate	88	6.0114	2.6151	.4796

(*)p=.06					
*p<.05					
**p<.01					
***p<.001					

Table 9

Tukey (HSD) Multiple Range Test at the 0.05 Level
for Testing the Main Effects of Self-Set-Goal
Conditions on the Dependent Variables
After Removing those Subjects Who Did Not Understand
the Self-Set-Goal Manipulations

Dependent Variables	N	Means	SD	Groups	F-Ratio
				G4 G2 G3 G1	
Productivity	46	92.7174	83.0290	No Goal(4)	9.7410 ***
	42	149.9286	88.9276	Easy G.(2)(*)	
	45	172.2444	101.9490	Free G.(3)(*)	
	42	191.7381	92.3202	Hard G.(1)(*)	
Percentage of Personal Goal (PPG)	42	29.9048	34.6169	Easy G.(2)	3.9328 ***
	45	39.0889	34.8750	Free G.(3)	
	42	49.9048	28.0355	Hard G.(1) (*)	
Magnitude of Personal Goal (MPG)	42	2.9048	1.0075	Easy G.(2)	35.8508 ***
	45	4.1333	1.0996	Free G.(3) (*)	
	42	5.0476	1.3606	Hard G.(1) (*) (*)	
Goal Commitment	42	47.5000	8.0645	Hard G.(1)	.7311
	45	46.0476	7.4734	Easy G.(2)	
	45	45.4444	8.6905	Free G.(3)	
Goal Attainment	42	-6.7188	123.4591	Hard G.(1)	.3464
	42	20.6002	210.4506	Easy G.(2)	
	45	16.4056	142.0083	Free G.(3)	
Overall Satisfaction	42	64.1429	11.2414	Hard G.(1)	1.2817
	42	60.7143	11.2798	Easy G.(2)	
	45	59.8889	10.5921	Free G.(3)	
	46	83.000	12.6947	No Goal(4)	
Overall Job Satisfaction	42	13.6429	3.9064	Hard G.(1)	.5823
	42	13.0952	3.7142	Easy G.(2)	
	45	12.7556	3.7909	Free G.(3)	
	46	13.6739	4.1261	No Goal(4)	
Satisfaction with Work	42	34.5952	6.9565	Hard G.(1)	1.0105
	42	32.4762	7.3956	Easy G.(2)	
	45	32.3556	6.8262	Free G.(3)	
	46	33.8478	7.2202	No Goal(4)	
Satisfaction with Methods of Payment	42	5.1429	1.6166	Hard G.(1)	.4137
	42	4.7857	1.3711	Easy G.(2)	
	45	4.9778	1.3566	Free G.(3)	
	46	4.9783	1.5274	No Goal(4)	

Table 9 (Continued)

Dependent Variables	N	Means	SD	Groups	F-Ratio			
					G1	G2	G3	G4
Perceived Expectancy	42	9.1190	2.1550	Hard G.(1)				***
	42	8.7619	1.9230	Easy G.(2)				3.0655
	45	8.7111	2.1598	Free G.(3)				
	46	9.7629	.4703	No Goal(4)			(*)	
Perceived Total	42	533.67	216.57	Hard G.(1)				
Valences of job	42	596.38	326.21	Easy G.(2)				.6315
Performance	45	507.9556	209.70	Free G.(3)				
	46	200.58	200.58	No Goal(4)				
Perceived Valences of Job	42	33.7619	17.8241	Hard G.(1)				
Performance (money)	42	35.1905	17.5029	Easy G.(2)				.4016
	45	32.2444	21.1801	Free G.(3)				
	46	36.3696	18.7573	No Goal(4)				
Perceived Valences of Job	42	44.4524	19.3784	Hard G.(1)				
Performance (Pride)	42	40.7952	18.4163	Easy G.(2)				.7205
	45	38.8222	19.3453	Free G.(3)				
	46	41.5652	17.6706	No Goal(4)				
Perceived Valences of Job	42	22.6429	18.1670	Hard G.(1)				
Performance (Entertainment)	42	24.7381	18.2784	Easy G.(2)				.2828
	45	21.5111	15.3896	Free G.(3)				
	46	23.6997	16.0470	No Goal(4)				
Perceived Valences of job	42	34.9524	23.0742	Hard G.(1)				
Performance (boredom)	42	47.5288	82.3790	Easy G.(2)				1.7677
	45	39.1111	20.3418	Free G.(3)				
	46	26.5000	16.9786	No Goal(4)				
Perceived Total	42	18.9286	3.8534	Hard G.(1)				
Valences of Outcomes	42	18.3333	3.9241	Easy G.(2)				1.5029
	45	17.4000	3.9738	Free G.(3)				
	46	17.4348	4.1828	No Goal(4)				
Perceived Valences of Money	42	4.5952	1.2109	Hard G.(1)				
	42	4.4762	1.3835	Easy G.(2)				.9504
	45	4.1111	1.6128	Free G.(3)				
	46	4.3043	1.4586	No Goal(4)				

Table 9 (Continued)

Dependent Variables	N	Means	SD	Groups	F-Ratio			
					G1	G2	G3	G4
Perceived Valences of Pride	42 42 45 46	4.9048 4.7619 4.444 4.6522	1.4785 1.3835 1.6033 1.3202	Hard G.(1) Easy G.(2) Free G.(3) No Goal(4)				.7921
Perceived Valences of Entertainment	42 42 45 46	3.9762 3.9524 3.4444 3.7609	1.7177 1.5134 1.5308 1.4171	Hard G.(1) Easy G.(2) Free G.(3) No Goal(4)				1.1093
Perceived Valences of Boredom	42 42 45 46	5.4524 5.1429 5.4000 4.7174	1.0170 1.2212 .9145 1.4857	Hard G.(1) Easy G.(2) Free G.(3) No Goal(4)			(*)	*** 3.6110 (*)
Perceived Total Instrumentality of Performance-Rewards Relationship	42 42 45 46	27.5952 30.2143 28.5556 28.4783	8.1122 15.1473 8.2367 7.4944	Hard G.(1) Easy G.(2) Free G.(3) No Goal(4)				.4878
Perceived Instrumentality of performance-Money Relationship	42 42 45 46	5.1905 5.6429 5.5556 5.9565	2.8817 3.3410 2.9890 2.7885	Hard G.(1) Easy G.(2) Free G.(3) No Goal(4)				.4827
perceived Instrumentality of performance-Pride Relationship	42 42 45 46	8.7381 7.9762 8.2667 8.6739	2.5285 2.7717 2.7831 2.2809	Hard G.(1) Easy G.(2) Free G.(3) No Goal(4)				.8186
Perceived Instrumentality of Performance-Entertainment Relationship	42 42 45 46	5.1905 5.6429 5.5556 5.9596	2.8817 3.3410 2.9890 2.7885	Hard G.(1) Easy G.(2) Free G.(3) No Goal(4)				.4827

Table 9 (Continued)

Dependent Variables	N	Means	SD	Groups	F-Ratio			
					G1	G2	G3	G4
Perceived	42	6.3333	3.2734	Hard G.(1)				
Instrument-	42	8.6905	13.6176	Easy G.(2)				1.5372
ality of	45	7.1556	3.2471	Free G.(3)				
Performance-	46	5.5217	2.7304	No Goal(4)				
Boredom relationship								
Force	42	4923.83	2339.17	Hard G.(1)				
(Valences of	42	4957.55	2549.42	Easy G.(2)				.2998
Job Per-	45	4569.08	2388.28	Free G.(3)				
formance X	46	4971.83	2100.50	No Goal(4)				
Expectancy)								
Strength	42	72.0238	14.5342	Hard G.(1)				
of Self-	42	67.3333	21.1852	Easy G.(2)				.8714
Efficacy	45	65.6222	21.6567	Free G.(3)				
	46	68.8478	18.1438	No Goal(4)				
Magnitude	42	6.6667	2.3547	Hard G.(1)				
of Self-	42	5.7143	2.5016	Easy G.(2)				1.1854
Efficacy	45	5.8444	2.9615	Free G.(3)				
	46	6.0652	2.1848	No Goal(4)				
Strength	42	10.4940	.6259	Hard G.(1)	(*)	(*)		**
of Self-	42	9.6786	1.7523	Easy G.(2)				3.4292
Efficacy	45	9.6444	1.8329	Free G.(3)				
at an Easy	46	10.1304	1.1782	No Goal(4)				
Level of Performance								
Strength	42	6.7222	2.4736	Hard G.(1)				
of Self-	42	5.6825	2.9189	Easy G.(2)				1.5961
Efficacy at	45	5.4963	3.1186	Free G.(3)				
a Moderate	46	5.9855	2.9855	No Goal(4)				
level of Performance								
Strength	42	2.9643	2.3514	Hard G.(1)				
of Self-	42	3.3452	2.5353	Easy G.(2)				.1942
Efficacy at	45	3.1136	2.4617	Free G.(3)				
a Difficult	46	3.0217	2.5494	No Goal(4)				
Level of Performance								
Strength	42	1.9762	1.9221	Hard G.(1)				
of Self-	42	2.4405	2.0666	Easy G.(2)				.3905
Efficacy	45	2.1889	1.8898	Free G.(3)				
at a Very	46	2.1630	2.0332	No Goal(4)				
Difficult Level of Performance								

(*) Denotes Pairs of Groups Significantly Different at the 0.05 Level

*p<.05
 **p<.01
 ***p<.001

valence of boredom, the F-ratio improved from (3.159; $p < .05$) to (3.611; $p < .01$), and concerning SES the F-ratio improved from (3.2810; $p < .05$) to (3.4292; $p < .01$).

5. Checking the validity of the experimental procedures

The design of the experiment required that subjects should be randomly and individually assigned to the experimental conditions, as previously explained. In addition, each subject required at least one and a half hours to do the experimental work. Since the total sample size was 184 subjects (plus 16 subjects in the pretest who were omitted from the analysis), conducting the experiment extended over several months. Accordingly, the researcher was concerned that prospective subjects might learn about the treatments from the preceding ones. To overcome this problem, subjects who had already finished the experiment were asked not to reveal any information about it to other subjects.

To check the validity of this procedure, each subject, after finishing the experiment, was asked the following question: "Did any of your friends explain to you the content of the study before your participation? Please place a check mark on either a or b (a = yes, and b = no)." Only one subject answered with "yes" and the rest (183 subjects) answered with "no," corroborating that the

experimental procedures were valid.

6. Checking the validity of the expectancy theory variables manipulations

To check the validity of perceived expectancy that high effort leads to high performance, subject should report greater perception of expectancy under the high-effort assumption than under the low-effort assumption, as previously explained. Table 10 shows that subjects reported significantly ($T = 22.29$; $p < .001$) greater perception of expectancy under the former assumption than under the latter.

In addition, to check on perceived instrumentality that high productivity leads to higher positive rewards, subjects should also report greater perception of instrumentality under the high productivity assumption than under the low productivity assumption, as previously explained. Table 10 shows also that subjects reported significantly higher perception of instrumentality--regarding the relationship between productivity and more money, pride, entertainment and low boredom--under the former assumption than under the latter.

Accordingly, the researcher can conclude that the expectancy theory components were understood by subjects.

Table 10

Check on the Validity of the Expectancy Theory
Variables Manipulations

Variables	N	Means	SD	T-Test Value
Perceived Expectancy Under the High Effort Assumption	184	9.0870	1.886	
Perceived Expectancy Under the Low Effort Assumption	184	5.7446	2.417	*** 22.29
Perceived Total Instrumentality of Productivity- Rewards relationship Under the High productivity Assumption	184	28.4674	10.190	
Perceived Total Instrumentality of Productivity- Rewards Relationship Under the Low Productivity Assumption	184	14.7283	6.576	*** 16.73
Perceived Instrumentality of Productivity-Money Relationship Under the High Productivity Assumption	184	7.7989	3.189	
Perceived Instrumentality of Productivity-Money Relationship Under the Low Productivity Assumption	184	3.3315	2.408	*** 17.39

Table 10 (Continued)

	N	Means	SD	F-Ratio
Perceived Instrumentality of Productivity-Pride Relationship Under the High Productivity Assumption	184	8.3370	2.689	
Perceived Instrumentality of Productivity-Pride Relationship Under the Low Productivity Assumption	184	3.0109	2.218	21.64 ***
Perceived Instrumentality of Productivity-Entertainment Relationship Under the High Productivity Assumption	184	5.6033	3.006	
Perceived Instrumentality of Productivity-Entertainment Relationship Under the Low Productivity Assumption	184	3.0652	2.199	10.94 ***
Perceived Instrumentality of Productivity-Low Boredom Relationship Under the High Productivity Assumption	184	6.7283	7.116	
Perceived Instrumentality of Productivity-Low Boredom Relationship Under the Low Productivity Assumption	184	5.3207	3.232	2.75 **

*p<.05
 **p<.01
 ***p<.001

Testing the research hypotheses

In this section the results of the tests of the research hypotheses are reported. Appropriate statistical procedures were used for this purpose as outlined in the methods chapter.

Since each hypothesis deals with a specific dependent variable, this section is organized according to the dependent variable with which each hypothesis deals. Table 11 shows a summary of the research results concerning the significant three-, two-, and one-way interaction.

Personal Goal

H1: A three-way interaction among methods of payment, conditions of self-set goals, and levels of self-esteem in influencing subjects' personal goal is expected with the following components:

A: With high self-esteem, conditions of self-set goals will interact with methods of payment in determining personal goals such that:

A1: Under the application of piece-rate plans, the manipulation of hard-self-set-goal condition will result in especially higher personal goals compared with the personal goals set under the manipulation of either easy-self-set-goal condition, or free-choice-self-set-goal condition.

A2: Under the application of hourly-flat-rate plans, the manipulation of hard-self-set-goal condition will result in slightly higher personal goals compared with the personal goals set under the manipulation of either easy-self-set-goal condition, or free-choice-self-set-goal condition.

Table 11
A Summary of the Significant Main and Interactive
Effects of the Research Variables

ANOVA (Factor by Covariant Interaction)				ANOVA (Factor by Factor Interaction)	
Variables	Covariant Effects	Two-Way-Interaction Effects	Three-Way-Interaction Effects	Main Effects	Two Way-Interaction Effects
Percentage of Personal Goal (PPG)	Self-Esteem • Self-Set-Goal Conditions •			Self-Set-Goal Conditions •	
Magnitude of Personal Goal (MPG)	Methods of Payment by Task-Specific Self-Esteem •			Methods of Payment •	
	Self-Set-Goal Conditions by Need for Money •			Self-Set-Goal Conditions •	
Productivity				Methods of Payment •	Methods of Payment by Self-Set-Goal Conditions •
				Self-Set-Goal Conditions •	
Goal Attainment				Methods of Payment •	
				Self-Set-Goal Conditions •	
Overall Satisfaction				Methods of Payment •	
				Self-Set-Goal Conditions •	
Expectancy	Task-Specific Self-Esteem •			Self-Set-Goal Conditions •	
	Self-Set-Goal Conditions by Need for Money •			Self-Set-Goal Conditions •	
Perceived Total Valences of Job Performance	Self-Set-Goal Conditions by Task-Specific Self-Esteem •			Self-Set-Goal Conditions •	

085.03

000000.001
000000.001
000000.001

B: With low self-esteem, conditions of self-set goals will interact with methods of payment in determining personal goals such that:

B1: Under the application of piece-rate plans, the manipulation of hard-self-set-goal condition will result in slightly higher personal goals compared with the personal goals set under the manipulation of either easy-self-set-goal condition, or free-choice-self-set-goal condition.

B2: Under the application of hourly-flat-rate plans, there will be no significant differences in personal goals set under the manipulation of hard, easy, or free-choice self-set goals conditions.

The researcher analyzed Hypothesis 1 using two kinds of personal goals, as follows: 1. Percentage of personal goal set by subjects, i.e., percentage improvement in productivity over productivity in the practice trial. 2. Magnitude of personal goal, i.e., how difficult was the goal chosen by subjects.

The correlation between percentage of personal goal and magnitude of personal goal was found to be positive and significant ($r = .3485$, $p. < .001$). This correlation shows that the two indicators of personal goal are related, but dissimilar, as evidenced by the moderate correlation between them. Therefore, when testing Hypothesis 1, personal goal will be classified into the following:

First: Percentage of personal goal.

Second: Magnitude of personal goal.

Percentage of personal goal

As previously explained, this research has focused on percentage improvement in productivity set above productivity in the practice trial as an indicator of personal goal, rather than the number of units to be produced above productivity in the practice trial (percentage improvement in productivity set above the practice trial multiplied by the productivity in the practice trial). The reason for such focus is to eliminate from the goal measure any variance related to ability that might exist within groups and influence the practice trial productivity. Table 12 shows that there were no significant differences in productivity in the practice trial between high- and low-self-esteem subjects, between high- and low-task-specific-self-esteem subjects, and between high- and low-need-for-money subjects. In addition, percentage of personal goal is not found to be significantly correlated with productivity in the practice trial. Accordingly, the researcher can safely rely on percentage improvement in productivity as an indicator of personal goal.

In testing Hypothesis 1, the researcher followed the procedures given by Keppel (1982), as previously explained (see Figure 7).

MANOVA was conducted to test Hypothesis 1. MANOVA (see Table 13) shows a significant two-way interaction between

Table 12

**The Practice Trial Productivity
Between Personality Groups**

Variables	Personality Groups	Means	SD	T-Prob. 2-Tail
Productivity in the Practice Trial (the Pre-testing Trial)	1. High Self-Esteem	403.6857	104.3	.167
	2. Low Self-Esteem	423.5856	121.7	
	1. High Task-Specific Self-Esteem	408.3762	124.3	.191
	2. Low Task-Specific Self-Esteem	427.2651	108.0	
	1. High Need for Money	431.6282	112.0	.501
	2. Low Need for Money	406.0566	120.499	

Table 13

MANOVA Results for the Effects on Percentage of
Personal Goal (PPG)

Sources of Variation	Sum of Squares	DF	Mean Squares	F-Ratio
Within + Residuals	127338.74	126	1010.62	*
Self-Esteem (SE)	6205.70	1	6205.70	6.14
Methods of Payment (MP)	1256.47	1	1256.47	1.24
Self-Set-Goal Conditions (SSGC)	7708.56	2	3854.28	*
MP by SSGC	2230.64	2	1115.32	3.81
MP by SE	1450.92	1	1450.92	1.10
SSGC by SE	6025.66	2	3012.83	1.44
MP by SSGC by SE	1895.77	2	947.88	2.98 *
MP by SSGC by SE				.94
Within + Residuals	128680.35	126	1021.27	
Task-Specific Self-Esteem (TSSE)	2813.22	1	2813.22	2.75
Methods of Payment (MP)	410.89	1	410.89	.40
Self-Set-Goal Conditions (SSGC)	2641.31	2	1320.66	1.29
MP by SSGC	3053.90	2	1526.95	1.50
MP by TSSE	299.80	1	229.80	.23
SSGC by TSSE	2103.15	2	1051.57	1.03
MP by SSGC by TSSE	3080.55	2	1540.27	1.51
Within + Residuals	33630.85	126	1060.54	
Need for Money (NM)	121.15	1	121.15	.11
Self-Set-Goal Conditions (SSGC)	1680.25	2	840.13	.79
Methods of Payment (MP)	3337.48	1	3337.48	3.15
MP by SSGC	3837.93	2	1918.96	1.81
MP by NM	1841.78	1	1841.78	1.74
SSGC by NM	124.78	2	62.39	.06
MP by SSGC by NM	2335.10	2	1162.55	1.10

*P<.05
**P<.01
***p<.001

self-set-goal conditions and self-esteem (i.e., a composite measure of Rosenberg and Coopersmith self-esteem scales). While the main effect of self-esteem and self-set-goal conditions is significant, it is not important. According to Lubin (1961) and Keppel (1982), if the interaction is significant, there is little reason for the researcher to be interested in the main effect. This is because the significant two-way interaction means that the variation among the treatment means cannot be entirely accounted for by the main effects (Lubin, 1961; Keppel, 1982).

The presence of the significant two-way interaction among self-set-goal conditions and self-esteem--in influencing percentage of personal goal--means that there are different self-set-goal-conditions effects for high- and for low-self-esteem subjects (conditions effects). In addition, this interaction might also mean that there are different "self-esteem effects" for the three goal conditions.

The upper part of Table 14 shows that there is a significant difference in percentage of personal goal due to goal conditions, only for high-self-esteem subjects, but not for low-self-esteem subjects. About self-esteem effects, the lower part of Table 14 shows that there are significant differences in percentage of personal goal--due to self-esteem--only under the free-choice-self-set-goal condition. In other words, the self-esteem effect

Table 14

The Simple Effects on Percentage of Personal Goal (PPG)

Dependent Variables	Sources	DF	Sum of Squares	Mean Squares	F-Ratio
PPG	A. Conditions Effects (Self-Set-Goal Conditions):				
	1. High Self-Esteem				**
	Between Groups	2	8711.0739	4355.5370	6.734
	Within Groups	76	49150.2679	646.7141	
	2. Low Self-Esteem				
	Between Groups	2	4296.7743	2148.3896	1.476
	Within Groups	56	81498.6106	1455.3323	
	B. Self-Esteem Effects:				
	1. Hard-Goal Condition				
	Between Groups	1	165.7993	165.7993	.203
	within Groups	43	35054.5119	815.2212	
	2. Easy-Goal Condition				
	Between Groups	1	1941.8157	1941.8157	1.7192
	Within Groups	44	49698.0974	1129.5022	
	3. Free-Choice-Goal Condition				***
	Between Groups	1	11490.8928	11490.8928	11.1317
	Within Groups	44	45419.8246	1032.2687	

*p<.05

**p<.01

***p<.001

concerning percentage of personal goal shows up only in the free-choice-goal condition.

To clarify the conditions effects further, the researcher conducted a multiple range test using Scheffe's procedures at the 0.050 level. The result of the Scheffe test is shown in Table 15.

The Scheffe test shows that, for high-self-esteem subjects, percentage of personal goal set under the manipulation of hard-self-set-goal condition is significantly higher than the percentage of personal goal set under the manipulation of either easy-self-set-goal condition, or free-choice-self-set-goal condition (see Table 15).

On the other hand, low-self-esteem subjects set considerably higher percentage of personal goal under the free-choice-self-set-goal condition than percentage of personal goal set under either easy, or hard self-set-goal conditions. However, because of the unequal variance among self-set-goal conditions, neither the Scheffe test, nor the simple contrast analysis were able to detect significant differences among these conditions (see Table 15; and Table 16).

This result is plotted in Figure 8. According to Figure 8, a two-way interaction of self-esteem and self-set-goal conditions is evident since the lines connecting the means of percentage of personal goal--over the

Table 15
The Scheffe Test at the 0.05 Level
for the Effects on Percentage of Personal Goal (PPG)

Dependent Variables	Covariants	N	Means	SD	Groups	G2	G3	G1
PPG	1. High	29	24.0690	20.8976	Easy Goal(2)			
	Self-	27	27.111	25.8328	Free Goal(3)			
	Esteem	23	48.4783	29.8266	Hard Goal(1)(*) (*)			
	2. Low	17	37.5299	48.3931	Easy Goal(2)			
	Self-	19	59.2105	39.4892	Free Goal(3)			
	Esteem	23	51.3478	26.9336	Hard Goal(1)			

(*) Denotes Pairs of Groups Significantly Different at the 0.05 Level.

Table 16
The Simple Contrast Test for the
Effects of Goal Conditions on Percentage of Personal
Goal (PPG) for Low-Self-Esteem Subjects

Contrasts	Value	S. Error	DF	T-Value
Contrast 1 (Hard Goals Vs Easy Goals)	14.7889	12.3942	55	1.193(ns)
Contrast 2 (hard Goals Vs Free Goals)	-6.8923	12.0206	55	-0.573(ns)
Contrast 3 (Easy Goals Vs Free Goals)	21.6811	12.8136	55	1.692(ns)

PERCENTAGE
OF PERSONAL
GOAL (PPG)

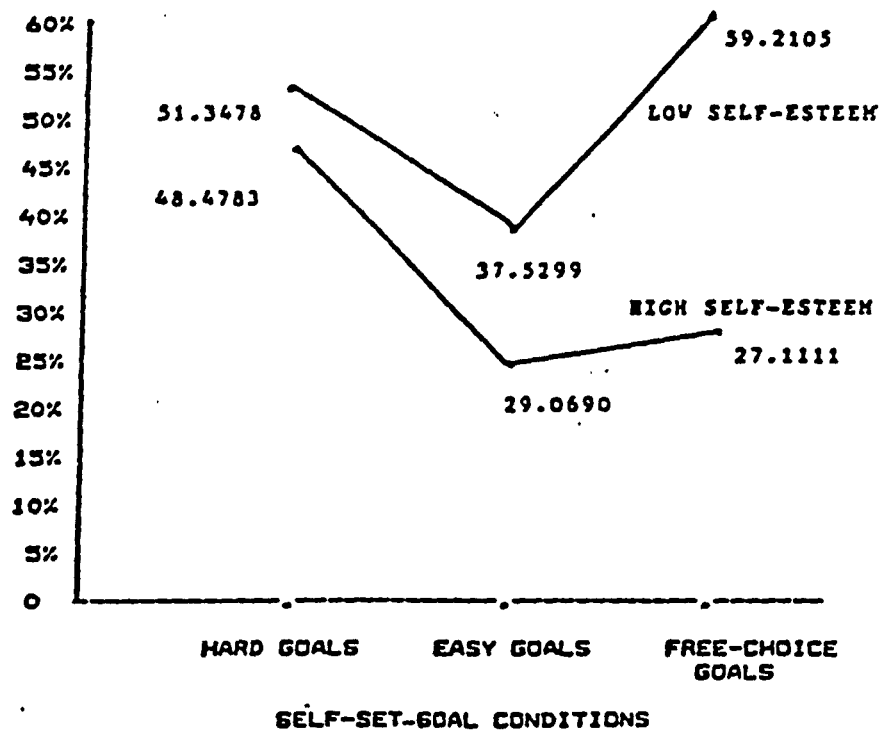


Figure 8. The impact of the interaction between self-set-goal conditions and self-esteem on personal goal (PPG) choices

treatment of self-set-goal conditions--are not the same for high- and for low-self-esteem subjects, i.e., the two lines are not parallel to each other. According to Lubin (1961), for the interaction to exist, at least one set of the means must be nonparallel to the other.

In all self-set-goal conditions, percentages of personal goals set by low-self-esteem subjects were higher than those percentages set by high-self-esteem subjects. However, the differences in percentages of personal goals set by high- and by low-self-esteem subjects were significant only under the free-choice-self-set-goal condition (see Table 15 & Figure 8).

Table 17 shows the correlation between percentage of personal goal and several dependent variables for high- and for low-self-esteem subjects. While both high- and low-self-esteem subjects show significant positive correlation between percentage of personal goal and several dependent variables, low-self-esteem subjects, as opposed to high-self-esteem subjects, show no significant correlation between percentage of personal goal and the following variables: productivity, goal commitment, overall satisfaction, satisfaction with work, and perceived total valences of outcomes that are contingent on high performance (a composite measure of perceived valences of money, of pride, of entertainment, and of boredom). In addition, while both high- and low-self-esteem subjects

Table 17

The Correlation Between Percentage of Personal Goal (PPG) and the Dependent Variables for High and for Low-Self-Esteem Subjects

Dependent Variables	Correlation Between PPG and the Dependent Variables	
	High Self-Esteem	Low Self-Esteem
Magnitude of Personal Goal (MPG)	*** .3929	** .3010
Productivity	*** .4029a	.1623
Goal Commitment	** .2880	.1993
Goal Attainment	*** -.5001	*** -.8023
Overall Satisfaction	* .2306	.1671
Satisfaction With Work	* .1967	.1228
Strength of Self-Efficacy	* .2306	** .2731
Magnitude of Self-Efficacy	** .2781	* .2245
Expectancy	** .2511	** .3083
Total Instrumentality of Performance-Rewards Relationship	* .2292	** .3265
Total Valences of Job Performance	** .3046	** .3258
Total Valences	** .3041	.1768

*p<.05
**p<.01
***p<.001

a This correlation is significantly higher ($p=.06$) than equivalent correlation for low-self-esteem subjects. Tested by difference in Fisher's z s procedures (Guilford, 1965)

show significant negative correlation between percentage of personal goal and discrepancy in goal attainment, this correlation for high self-esteem is moderate ($r = -.500$, $p < .001$), while for low self-esteem it is very high ($r = -.802$, $p < .001$) which means that high-self-esteem subjects did achieve their goals better than low-self-esteem subjects. Accordingly, for high-self-esteem subjects, the correlation results are almost in the expected direction of the research arguments, while for low-self-esteem subjects it is partially in the expected direction.

Considering the total sample, PPG correlated positively significantly with the following variables: productivity, goal commitment, overall satisfaction, expectancy, total valences of job performance, total instrumentality of performance to several rewards, and total valences of job outcomes (see the matrix correlation in Appendix B).

According to MANOVA and the simple effect results, Hypothesis 1 is not supported since the three-way interaction of methods of payment, self-set-goal conditions, and self-esteem is not significant. However, for high-self-esteem subjects, the result seems to be in the expected direction of the research arguments, holding methods of payment constant, while for low-self-esteem subjects, the result is not in the expected direction. In addition, neither the main, nor the interactive, effects of

methods of payment on PPG were found to be significant which is also not in the expected direction.

Magnitude of personal goal

MANOVA shows that there is a significant two-way interaction between methods of payment and task-specific self-esteem, and between need for money and self-set-goal conditions in influencing magnitude of personal goal (see Table 18).

A. Testing the significant two-way interaction between methods of payment and task-specific self-esteem in influencing magnitude of personal goal

The significant two-way interaction between methods of payment and task-specific self-esteem in influencing magnitude of personal goal means that there are different payment condition effects for high- and for low-task-specific-self-esteem subjects (conditions effects). In addition, this interaction might also mean that there are different "task-specific-self-esteem effects" for the two payment conditions.

Concerning the conditions effects, Table 19 shows that there are significant variations in magnitude of personal goal due to payment conditions only for high-task-specific-self-esteem subjects, but not for low-task-specific-self-esteem subjects. That is, high-task-specific-self-esteem subjects set goals of significantly higher magnitude

Table 18

MANOVA Results for the Effects on Magnitude of
Personal Goal (MPG)

Sources of Variation	Sum of Squares	DF	Mean Squares	F-Ratio
Within + Residuals	161.10	126	1.28	
Self-Esteem (SE)	.88	1	.88	.69
Methods of Payment (MP)	15.73	1	15.73	12.30 ***
Self-Set-Goal Conditions (SSGC)	100.09	2	50.04	39.14 ***
MP by SSGC	1.67	2	.84	.65
MP by SE	.11	1	.11	.09
SSGC by SE	1.38	2	.69	.54
MP by SSGC by SE	.94	2	.47	.37
Within + Residuals	150.53	126	1.19	
Task-Specific Self-Esteem (TSSE)	.71	1	.71	.59
Methods of Payment (MP)	8.20	1	8.20	6.87 *
Self-Set-Goal Conditions (SSGC)	4.32	2	2.16	1.81
MP by SSGC	2.70	2	1.35	1.13
MP by TSSE	11.21	1	11.21	9.38 ***
SSGC by TSSE	4.07	2	2.04	1.70
MP by SSGC by TSSE	2.19	2	1.10	.92
Within + Residuals	156.95	126	1.25	
Need for Money (NM)	.17	1	.17	.14
Self-Set-Goal Conditions (SSGC)	2.54	2	1.27	1.02
Methods of Payment (MP)	3.12	1	3.12	2.50
MP by SSGC	.91	2	.45	.36
MP by NM	.00	1	.00	.00
SSGC by NM	7.91	2	3.95	3.17 *
MP by SSGC by NM	1.25	2	.62	.50

*P<.05

**P<.01

***p<.001

Table 19

The Simple Effects on Magnitude of Personal Goal (MPG)

Dependent Variables	Sources	DF	Sum of Squares	Mean Squares	F-Ratio
MPG	A. Conditions Effects (Methods of Payment):				
	1. High Task-Specific Self-Esteem				
	Between Groups	1	17.1331	17.1331	7.509**
	Within Groups	56	127.7634	2.2815	
	2. Low Task-Specific Self-Esteem				
	Between Groups	1	3.7505	3.7505	2.092
	Within Groups	78	139.7995	1.7923	
	B. Task-Specific-Self-Esteem Effects:				
	1. Piece-Rate Condition				
	Between Groups	1	5.9940	5.9940	3.375
	within Groups	67	118.9915	1.7760	
	2. Hourly-Flat-Rate Condition				
	Between Groups	1	.0663	.0663	.0299
	Within Groups	67	148.5714	2.2175	

*p<.05

**p<.01

***p<.001

under piece-rate plans than under hourly-flat-rate plans. For low-task-specific-self-esteem subjects, however, there is no significant differences in magnitude of personal goal set either under piece-rate plans, or under hourly-flat-rate plans (see Table 19).

Concerning "task-specific self-esteem effects," Table 19 shows that there are no significant differences in magnitude of personal goal between high- and low-task-specific-self-esteem subjects at either piece-rate plans, or hourly-flat-rate plans. However, high-task-specific-self-esteem subjects set considerably goals of higher magnitude under piece-rate plans than those goals set by low-task-specific-self-esteem subjects under these plans.

Figure 9 illustrates this result graphically. The interaction is evident since the lines connecting the magnitude of personal goal means--over methods of payment--for high and for low task-specific-self-esteem subjects are not parallel to each other. The slope of the means line for high-task-specific-self-esteem subjects is much steeper than the slope of the means line for low-task-specific-self-esteem subjects.

Hypothesis 1 is not supported since the three-way interaction among methods of payment, self-set-goal conditions, and task-specific self-esteem is not significant in influencing magnitude of personal goal.

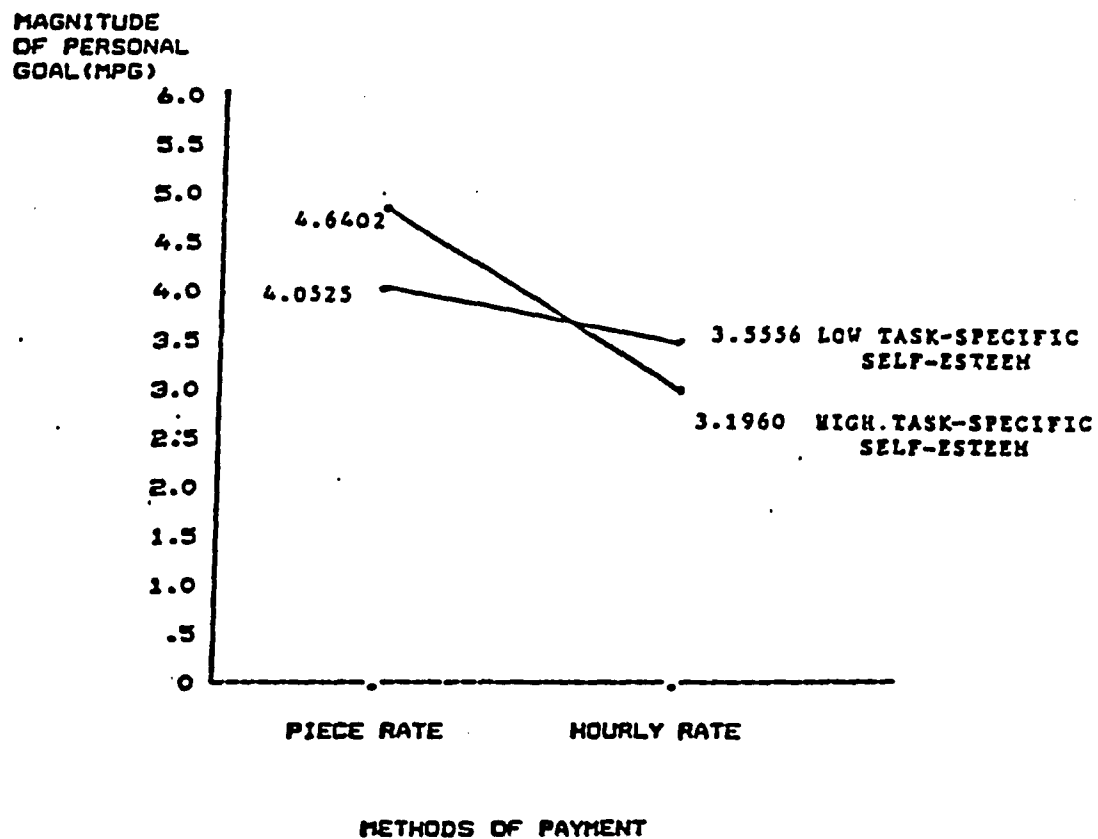


Figure 9. The impact of the interaction between methods of payment and task-specific self-esteem on magnitude of personal goal (MPG) choices

However, the result of the significant two-way interaction is in the expected direction with the research arguments concerning the relationship between task-specific self-esteem and methods of payment, holding self-set-goal condition constant.

Table 20 shows the correlation between magnitude of personal goal and several dependent variables for high- and for low-task-specific-self-esteem subjects. For high-task-specific-self-esteem subjects, as opposed to low-task-specific-self-esteem subjects, there is a significant positive correlation between magnitude of personal goal and each of the following variables: goal commitment, overall satisfaction, perceived total valences of job outcomes, perceived instrumentality [that is, high performance leads to higher positive (and lesser negative) outcomes], and perceived total valences of job performance. However, only the last two correlations for high-task-specific-self-esteem subjects were found to be significantly higher than equivalent correlations for low-task-specific-self-esteem subjects. Accordingly, it can be concluded that task-specific self-esteem moderates the relationship between magnitude of personal goals and both perceived instrumentality (of high performance to rewards) and perceived valences of job performance. These results are in the expected direction.

Considering the total sample, MPG correlated

Table 20

The Correlation Between Magnitude of Personal Goal (MPG) and the Dependent Variables for High and for Low Task-Specific Self-Esteem Subjects

Dependent Variables	Correlation Between MPG and the Dependent Variables	
	High Task-Specific Self-Esteem	Low Task-Specific Self-Esteem
Percentage of Personal Goal (PPG)	.3700 **	.3056 **
Productivity	.0904 **	.1098
Goal Commitment	.2537 *	.1326 *
Goal Attainment	-.2665 *	-.2002
Overall Satisfaction	.2566	.1258
Satisfaction With Work	.1719	.1662
Strength of Self-Efficacy	-.0194	.0665
Magnitude of Self-Efficacy	-.0406	.0907
Expectancy	-.0395	-.0013
Total Instrumentality of Performance-Rewards Relationship	.3300a **	.0096
Total Valences of Job Performance	.3595(a) **	.0804
Total Valences	.2768	.1643

*p<.05
 **p<.01
 ***p<.001

a. Correlation is significantly higher ($p=.02$) than equivalent correlation for low-TSSE subjects. Tested by difference in Fisher's z_s (Guilford, 1965)

(a) Correlation is significantly higher ($p=.04$) than equivalent correlation for low-TSSE subjects. Tested by difference in Fisher's z_s (Guilford, 1965)

significantly positively with the following variables: goal commitment, overall satisfaction, total valences of job performance, and total valences of several job outcomes (see the matrix correlation in Appendix B).

B. Testing the significant two-way interaction between self-set-goal conditions and need for money in influencing magnitude of personal goal

MANOVA shows also that there is a significant two-way interaction between self-set-goal conditions and need for money. This interaction means that there are different goal condition effects for high- and for low-need-for-money subjects (conditions effects). This interaction means also that there might be different "need-for-money effects" for the three goal conditions.

With respect to the "conditions effects," Table 21 shows the simple effect (i.e., variation in magnitude of personal goal among goal conditions for high- and for low-need-for-money subjects).

Interpreting the result of the simple effect shows that there are significant differences in magnitude of personal goal due to goal conditions for both high- ($F = 37.228, p < .001$) and low-need-for-money subjects ($F = 7.7012, p < .001$).

With respect to the "need-for-money effects," there are significant differences in magnitude of personal goal

Table 21

The Simple Effects on Magnitude of Personal Goal (MPG)

Dependent Variables	Sources	DF	Sum of Squares	Mean Squares	F-Ratio
MPG	A. Conditions Effects (Self-Set-Goal Conditions):				
	1. High Need for Money				
	Between Groups	2	89.6736	44.8368	37.2280 ***
	Within Groups	80	96.3505	1.2044	
	2. Low Need for Money				
	Between Groups	2	23.0591	11.5295	7.7012 ***
	Within Groups	52	77.8500	1.4971	
	B. Need-for-Money Effects:				
	1. Hard-Goal Condition				
	Between Groups	1	2.8292	2.8292	1.5741
	Within Groups	44	79.0839	1.7974	
	2. Easy-Goal Condition				
	Between Groups	1	.1225	.1225	.1144
	Within Groups	44	47.1167	1.0708	
	3. Free-Choice-Goal Condition				
	Between Groups	1	6.4565	6.4565	5.9185 **
	Within Groups	44	48.0000	1.0909	

*p<.05

**p<.01

***p<.001

between high- and low-need-for-money-subjects only under the free-choice-goal condition (condition 3).

To identify the specific goal conditions that are responsible for the significant variation in magnitude of personal goal, the Scheffe multiple range test (see Table 22) shows that for high-need-for-money subjects, hard-goal condition and free-choice-goal condition have significantly higher magnitude of personal goal than easy-goal condition. For low-need-for-money-subjects, hard-goal condition shows significantly higher magnitude of personal goal than easy-goal condition.

With respect to the "need for money effects," high-need-for-money subjects set goals of significantly higher magnitude than low-need-for-money-subjects under the free-choice-self-set-goal condition.

Figure 10 represents this result graphically. The interaction is evident since the lines connecting the means of magnitude of personal goal over the payment conditions for high-need-for-money subjects and for low-need-for-money-subjects are not parallel to each other.

The result concerning the interaction of goal conditions and need for money in influencing magnitude of personal goal is somewhat surprising since methods of payment show no influence. Therefore, this result suggests that, in the absence of methods of payment effect, although high-need-for-money subjects show stronger response to the

Table 22

The Scheffe Test at The 0.05 Level for the Effects
on Magnitude of Personal Goal (Mpg)

Dependent Variables	Covariants	N	Means	SD	Groups			
						G2	G3	G1
MPG	1. High	30	2.7667	.9714	Easy Goal(2)			
	Need	22	4.5000	1.1852	Free Goal(3)(*)			
	for	31	5.1290	1.1472	Hard Goal(1)(*)			
	Money							
	2. Low	16	2.8750	1.1475	Easy Goal(2)			
	Need	24	3.7500	.8969	Free Goal(3)			
	for	15	4.6000	1.6818	Hard Goal(1)(*)			
	Money							

(*) Denotes Pairs of Groups Significantly Different at the 0.05
Level.

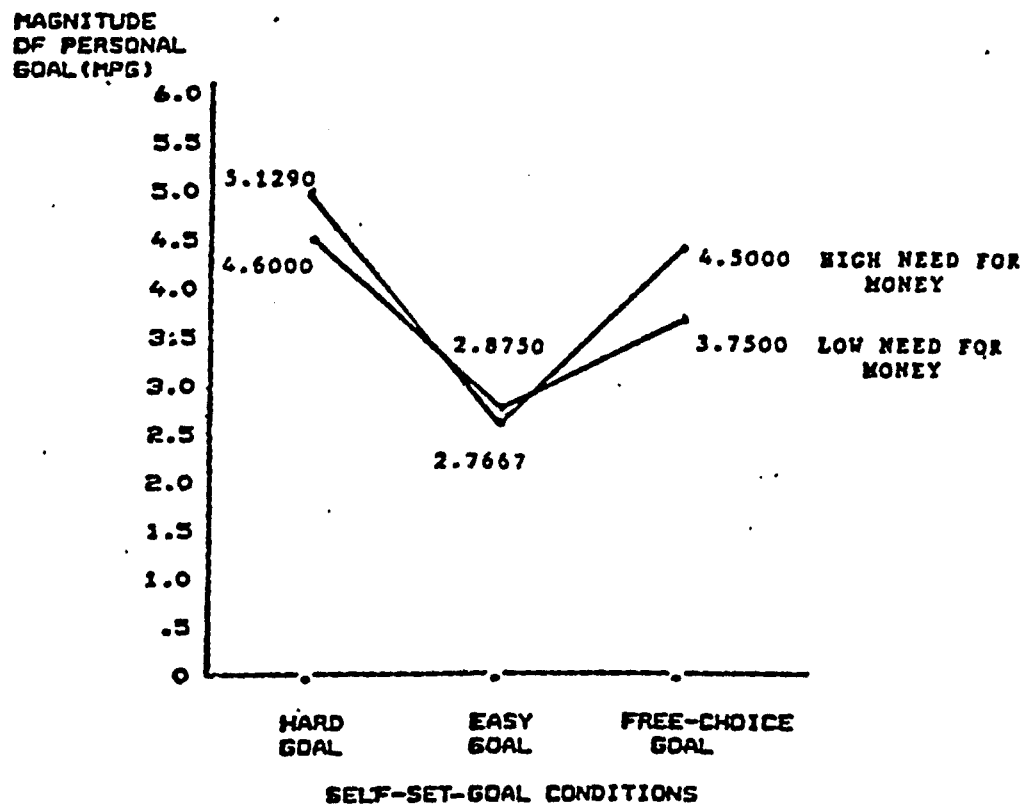


Figure 10. The impact of the interaction between self-set-goal conditions and need for money on magnitude of personal goal (MPG) choices

effects of goal conditions than low-need-for-money-subjects, both subjects were responsive to the effects of goal conditions. This should be in the expected direction since in the absence of methods of payment effect, everything being equal, both high and low need-for-money-subjects should show similar response to the goal conditions regarding magnitude of personal goal.

Table 23 shows the correlation between magnitude of personal goal and several dependent variables for high- and for low-need-for-money subjects. High-need-for-money subjects, as opposed to low-need-for-money-subjects, show significant positive correlation between magnitude of personal goal and the following variables: goal commitment, perceived total valences of outcomes that are contingent on high performance, overall satisfaction, and satisfaction with work. However, the last two correlations for high-need-for-money subjects were significantly higher than equivalent correlations for low-need-for-money subjects. This suggests that need for money moderates the relationship between magnitude of personal goals and satisfaction.

Low-need-for-money-subjects, as opposed to high-need-for-money subjects, however, show significant positive correlation between magnitude of personal goal and the following variables: perceived instrumentality [that is, high performance leads to higher positive (and lesser

Table 23

The Correlations Between Magnitude of Personal Goal (MPG) and the Dependent Variables for High and for Low Need-for-Money Subjects

Dependent Variables	Correlations Between MPG and the Dependent Variables	
	High Need for Money	Low Need for Money
Percentage of Personal Goal (PPG)	*** .35116	** .3418
Productivity	.1631	.0711
Goal Commitment	** .2659	.0944
Goal Attainment	** -.2507	* -.2269
Overall Satisfaction	*** .3403a	-.0689
Satisfaction With Work	** .2934(a)	-.0228
Strength of Self-Efficacy	.1472	-.1265
Magnitude of Self-Efficacy	.1222	-.0790
Expectancy	.0620	-.0485
Total Instrumentality of Performance-Rewards Relationship	.0831	* .2238
Total Valences of Job Performance	.1329	** .2887
Total Valences	** .2343	.1182

*p<.05
**p<.01
***p<.001

a Correlation is significantly higher ($p<.01$) than equivalent correlation for low-need-for-money subjects. Tested by difference in Fisher's z s (Guilford, 1965).

(a) Correlation is significantly higher ($p=.03$) than equivalent correlation for low-need-for-money subjects. Tested by difference in Fisher's z s (Guilford, 1965).

negative) outcomes], and perceived total valences of job performance. However, there were no significant differences between these correlations for low-need-for-money subjects and equivalent correlations for high-need-for-money subjects. Therefore, need for money is not a moderator of the relationship between magnitude of personal goals and both perceived instrumentality (performance-rewards relationship), and total valences of job performance.

Productivity, goal attainment, and satisfaction

H2: A three-way interaction among methods of payment, conditions of self-set goals, and levels of self-esteem in influencing subjects' productivity, goal attainment, and satisfaction is expected with the following components:

A: With high self-esteem, conditions of self-set goals will interact with methods of payment in determining productivity, goal attainment, and satisfaction such that:

A1: Under the application of piece-rate plans, the manipulation of hard-self-set-goal condition will result in especially higher productivity, goal attainment, and satisfaction compared with the productivity, goal attainment, and satisfaction under the manipulation of either easy-self-set-goal condition, or free-choice-self-set-goal condition.

A2: Under the application of hourly-flat-rate plans, the manipulation of hard-self-set-goal condition will result in slightly higher productivity, goal attainment, and satisfaction compared with the productivity, goal attainment, and satisfaction under the manipulation of either easy-self-set-goal condition, or free-choice-self-set-goal condition.

B: With low self-esteem, conditions of self-set goals will interact with methods of payment in determining productivity, goal attainment, and satisfaction such that:

B1: Under the application of piece-rate plans, the manipulation of hard-self-set-goal condition will result in slightly higher productivity, goal attainment, and satisfaction compared with the productivity, goal attainment, and satisfaction under the manipulation of either easy-self-set-goal

condition, or free-choice-self-set-goal condition.

B2: Under the application of hourly-flat-rate plans, there will be no significant differences in productivity, goal attainment, and satisfaction under the manipulation of hard, easy, and free-choice self-set-goal conditions.

A. Productivity

To test Hypothesis 2 regarding productivity, MANOVA (see Table 24) shows that there is no significant factor by covariant interaction. Accordingly, the interactive effect of methods of payment and self-set-goal conditions should be of interest to the researcher.

To test the interactive effect of these variables on productivity, ANOVA (see Table 25) shows that both the main and the interactive effects were significant in influencing productivity (only among goal conditions, i.e., without taking into consideration the no-goal conditions) (see Table 25).

When all the experimental conditions were considered, the main effect remains significant, but the interactive effect becomes marginally insignificant ($p = .06$).

Since the two-way interaction of methods of payment and self-set-goal conditions is significant in influencing productivity, the main effect is not of interest to the researcher.

Table 24

MANOVA Results for the Effects on Productivity

Sources of Variation	Sum of Squares	DF	Mean Squares	F-Ratio
Within + Residuals	1299905.99	168	7737.54	
Self-Esteem (SE)	713.64	1	713.64	.09
Methods of Payment (MP)	82494.99	1	82494.99	10.66 ***
Self-Set-Goal Conditions (SSGC)	254080.51	3	84693.50	10.95 ***
MP by SSGC	37723.29	3	12574.43	1.63
MP by SE	32.50	1	52.50	.00
SSGC by SE	25148.32	3	8382.77	1.08
MP by SSGC by SE	46639.58	3	15546.53	2.01
Within + Residuals	1281083.23	168	7625.50	
Task-Specific Self-Esteem (TSSE)	4148.85	1	4148.85	.54
Methods of Payment (MP)	6.25	1	6.25	.00
Self-Set-Goal Conditions (SSGC)	33720.84	3	11240.28	1.47
MP by SSGC	43666.74	3	14555.58	1.91
MP by TSSE	791.59	1	791.59	.10
SSGC by TSSE	46613.75	3	15537.92	2.04
MP by SSGC by TSSE	34825.80	3	11608.60	1.52
Within + Residuals	1298275.28	168	7727.83	
Need for Money (NM)	15001.60	1	15001.60	1.94
Self-Set-Goal Conditions (SSGC)	116940.53	3	38980.18	5.04 **
Methods of Payment (MP)	21589.61	1	21589.61	2.79
MP by SSGC	7504.90	3	2501.63	.32
MP by NM	818.75	1	818.75	.11
SSGC by NM	27050.97	3	9016.99	.17
MP by SSGC by NM	33457.37	3	11152.46	1.44

*P<.05

**P<.01

***p<.001

Table 25

ANOVA Results for The Effects on Productivity

Sources of Variations	Sum of Squares	DF	Mean Squares	F-Ratio
Main Effect	131841.210	3	43947.070	5.436 ***
Methods of Payment (MP)	81662.674	1	81662.647	10.101 **
Self-set-Goal				*
Conditions (SSGC)	50178.536	2	25089.268	3.103
2 Way-Interaction	48886.478	2	24443.239	3.025 *
MP SSGC	48886.478	2	24443.239	3.024 **
Explained	180727.688	5	36145.538	4.471
Residual	1067134.783	132	8084.354	
Total	1247862.471	135	9108.485	

*p<.05
 **p<.01
 ***p<.001

Analyzing the significant two-way
interaction of methods of payment and self-set-goal
conditions in influencing productivity

The presence of this significant two-way interaction means that there is a significant variation in productivity at each goal condition due to the effect of methods of payment. In addition, this significant two-way interaction might also mean that there is a significant variation in productivity due to goal conditions at each level of methods of payment (i.e., piece-rate plans and hourly-rate plans). In other words, the main effect of goal conditions cannot fully explain the variation in productivity without taking into consideration the effect of methods of payment, and vice versa.

Table 26 shows the simple effect of methods of payment on variation in productivity at each goal condition (hard-goal, easy-goal, free-choice-goal, and no-goal conditions).

According to Table 26, subjects have significantly higher productivity under the application of piece-rate plans than under the application of hourly-flat-rate plans only at the easy-goal condition and at the free-choice-goal condition; whereas at both the hard-goal condition and the no-goal condition, there were no significant differences in productivity between piece-rate plans and hourly-rate plans.

The significant two-way interaction of methods of

Table 26

The Simple Effects on Productivity
(Variations in Productivity At Each Goal Condition
Due to the Effects of Methods of Payment)

Sources of Variations	DF	Sum of Squares	Mean Squares	F-Ratio
Conditions Effects (Methods of Payment)				
1. Hard-self-set-Goal Conditions:				
Between Groups	1	80.8913	80.8913	.0091
Within Groups	44	392537.8261	8921.3142	
Total	45	392618.7174		
2. Easy-Self-Set-Goal Conditions:				
Between Groups	1	44206.0000	44206.0000	6.5472 **
Within Groups	44	297083.7391	6751.9032	
Total	45	341285.7391		
3. Free-Choice-Self-Set-Goal Conditions:				
Between Groups	1	86262.2609	86262.2609	10.0541 **
Within Groups	44	377513.2174	8579.8458	
Total	45	463775.4783		
4. No-Goal Conditions:				
Between Groups	1	3780.1957	3780.1957	.5428
Within Groups	44	306441.1304	6964.5711	
Total	45	310221.3261		

*p<.05
**p<.01
***p<.001

payment and self-set-goal conditions can be also analyzed by examining the simple effect of self-set-goal conditions on productivity at each level of methods of payment, i.e., piece-rate plans and hourly-rate plans.

Table 27 shows that there is a significant variation in productivity among goal conditions due to both piece-rate plans and hourly-flat-rate plans.

To clarify the result of Table 27, Tukey multiple range test (see Table 28) shows that, under the application of piece-rate plans, productivity under the free-choice-goal condition (condition 5), hard-goal condition (condition 1), and easy-goal condition (condition 3) was significantly higher than productivity under the no-goal condition (condition 7). No other significant differences in productivity were found among goal conditions under the application of piece-rate plans.

Tukey's multiple range test shows, however, that under the application of hourly-flat-rate plans, productivity under the hard-goal condition (condition 2) was significantly higher than productivity under all other experimental conditions (i.e., no-goal condition, easy-goal condition, and free-choice-goal condition) (see Table 28). No other significant differences in productivity were found among goal conditions at hourly-rate plans.

Figure 11 clarifies the previous results graphically. The interaction between methods of payment and self-set-

Table 27

**The Simple Effects on Productivity
(Variations in Productivity Among Goal Conditions
At Each Level of Methods of Payment)**

Sources of Variations	DF	Sum Of Squares	Mean Squares	F-Ratio

Conditions Effects (Self-Set-Goal Conditions)

1. Piece-Rate:

Between Groups	3	166082.5652	55360.8551	*** 6.7146
Within Groups	88	725543.6522	8244.8142	
Totals	91	891626.2124		

2. Hourly-Rate:

Between Groups	3	155227.2174	51742.4058	*** 7.0264
Within Groups	88	648032.2609	7364.0030	

*p<.05
**p<.01
***p<.001

Table 28

**Tukey HSD at the 0.05 Level for
the Effects on Productivity**

Dependent Variables	Independent Variables	N	Means	SD	Groups	G7 G3 G1 G5
Productivity	1. Piece-Rate	23	101.7826	75.15	No Goal(7)	
		23	179.6957	71.73	Easy Goal(3)(*)	
		23	194.0435	102.82	Hard Goal(1)(*)	
		23	213.1826	107.76	Free Goal(5)(*)	
Groups						G8 G4 G6 G2
	2. Hourly-Rate	23	83.6522	91.00	NO Goal(8)	
		23	117.6957	91.4188	Easy Goal(4)	
		23	127.1739	74.4798	Free Goal(6)	
		23	196.6957	85.2656	Hard Goal(2)(*)(*)(*)	

(*) Denotes Pairs of Groups Significantly Different at the 0.05 Level.

PRODUCTIVITY
(NUMBER
OF
ANSWERS
CODED)

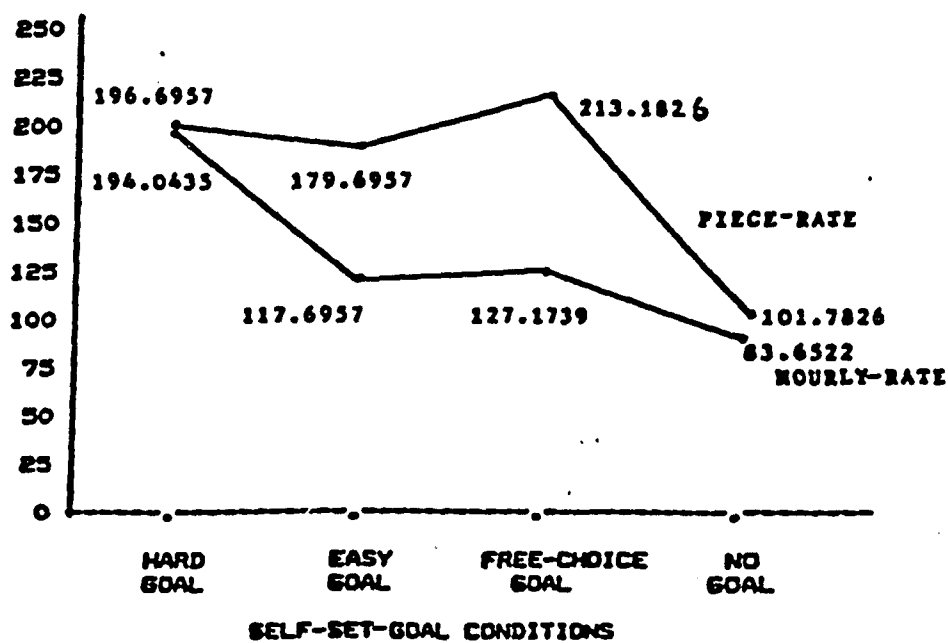


Figure 11. The impact of the interaction between self-set-goal conditions and methods of payment on productivity

goal conditions in influencing productivity is evident. This is because the lines connecting the productivity means over the goal conditions under the application of piece-rate plans and hourly-rate plans are not parallel to each other.

This result offers no support to Hypothesis 2 since the three-way interaction is not found to be significant. However, the result offers some support to the research arguments regarding the relationship between goal and methods of payment, holding the individual differences variables constant.

Under the application of piece-rate plans, productivity under each goal condition was superior to productivity under no-goal condition (i.e., offering support to the goal setting approach to motivation). Under the application of hourly-flat-rate plans, however, productivity under the hard-goal condition was significantly higher than productivity under all other experimental conditions (i.e., offering support to goal difficulty approach to motivation).

It should be noted that productivity correlated significantly positive with the following variables: percentage of personal goal, goal attainment, self-efficacy strength, self-efficacy magnitude, perceived instrumentality that high productivity leads to higher positive (and lesser negative) outcomes, and perceived

total valences of job performance. These results are in the expected direction with the research arguments. However, productivity is not significantly correlated with the following variables: magnitude of personal goal, goal commitment, overall satisfaction, expectancy, and perceived total valences of outcomes that are contingent on high performance (see the matrix correlation in Appendix B). This result is not in the expected direction with the research arguments.

B. Goal Attainment

MANOVA shows that there is a significant ($p < .05$) three-way interaction among methods of payment, self-set-goal conditions, and need for money measure in influencing goal attainment (see Table 29).

The presence of this significant three-way interaction means that the variation in goal attainment among both methods of payment and self-set-goal conditions will not be the same for high- and for low-need-for-money subjects (conditions effects). In other words, variation in goal attainment among methods of payment and goal conditions cannot be fully explained without taking the effect of need for money into consideration.

In addition, the presence of this significant three-way interaction might also mean that there are significant variations in goal attainment due to "need-for-money

Table 29

MANOVA Results for the Effects on Goal Attainment

Sources of Variation	Sum of Squares	DF	Mean Squares	F-Ratio
Within + Residuals	3316015.25	126	26317.58	
Self-Esteem (SE)	85149.67	1	85149.67	3.24
Methods of Payment (MP)	15005.95	1	15005.95	.57
Self-Set-Goal Conditions (SSGC)	8457.97	2	4228.99	.16
MP by SSGC	2385.27	2	1192.64	.05
MP by SE	1521.55	1	1521.55	.06
SSGC by SE	14792.08	2	7396.04	.28
MP by SSGC by SE	57526.14	2	28763.07	1.09
Within + Residuals	3272459.55	126	25971.90	
Task-Specific Self-Esteem (TSSE)	49446.84	1	49446.84	1.90
Methods of Payment (MP)	1333.59	1	1333.59	.05
Self-Set-Goal Conditions (SSGC)	23107.33	2	11553.67	.44
MP by SSGC	74369.86	2	37184.93	1.43
MP by TSSE	1009.96	1	1009.96	.04
SSGC by TSSE	22552.63	2	11276.31	.43
MP by SSGC by TSSE	76821.24	2	38410.62	1.48
Within + Residuals	3222527.23	126	25575.61	
Need for Money (NM)	1540.64	1	1540.64	.06
Self-Set-Goal Conditions (SSGC)	40250.32	2	20125.16	.79
Methods of Payment (MP)	8265.31	1	8265.31	.32
MP by SSGC	165772.69	2	82886.34	3.24 *
MP by NM	21312.65	1	21312.65	.83
SSGC by NM	56275.14	2	28137.57	1.10
MP by SSGC by NM	180736.96	2	90368.48	3.53 *

*P<.05

**P<.01

***p<.001

effects" at each experimental condition.

To clarify the "condition effects," Table 30 shows that there is a significant variation in goal attainment--due to the effects of methods of payment and self-set-goal conditions--only for high-need-for-money subjects, but not for low-need-for-money subjects.

In addition, to clarify the "need-for-money effects," Table 30 shows also that there are significant variations in goal attainment--due to need-for-money effects--only at both the easy-goal-hourly-flat-rate condition (condition 4) and the free-choice-goal-hourly-flat-rate condition (condition 6). That is, at the easy-goal-hourly-flat-rate condition, low-need-for-money subjects significantly attained their goals (and produced beyond them) than high-need-for-money subjects. In addition, under the free-choice-hourly-flat-rate condition (condition 6), low-need-for-money subjects significantly attained their goals (and produced beyond them) than high-need-for-money subjects. There were no significant differences in goal attainment between high- and low-need-for-money subjects at any of the remaining experimental conditions.

Table 31 clarifies further the "conditions effect." According to Table 31, for high-need-for-money subjects, considerably higher goal attainment was obtained under the easy- goal-piece-rate condition than under all other experimental conditions. For low-need-for-money subjects,

Table 30

The Simple Effects on Goal Attainment

Dependent Variables	Sources	DF	Sum of Squares	Mean Squares	F-Ratio
Goal Attainment	A. Conditions Effects (Self-Set-Goal Conditions By Methods of Payment):				
	1. High Need for Money:				
	Between Groups	5	182716.81	36543.36	2.235
	Within Groups	77	1258852.79	16348.73	
	2. Low Need for Money:				
	Between Groups	5	239855.46	47971.09	1.342
	Within Groups	49	1751549.39	35745.9060	
	B. Need-for-Money Effects:				
	1. Hard-Goal-Piece-Rate Condition				
	Between Groups	1	39641.93	39641.93	2.386
	within Groups	21	348844.73	16611.65	
	2. Hard-Goal-Hourly-Rate Condition				
	Between Groups	1	5373.99	5373.99	.406
	Within Groups	21	277360.52	13207.64	
	3. Easy-Goal-Piece-Rate Condition				
	Between Groups	1	179760.86	179760.86	3.096
	Within Groups	21	1219064.48	58050.68	
	4. Easy-Goal-Hourly-Rate Condition				
	Between Groups	1	76346.27	76346.27	4.292
	Within Groups	21	373487.87	17785.13	
	5. Free-Choice-Goal-Piece-Rate Condition				
	Between Groups	1	53387.56	53387.56	2.08
	Within Groups	21	538681.88	25651.51	
	6. Free-Choice-Goal-Hourly-Rate Condition				
	Between Groups	1	78942.06	78942.00	6.553
	Within Groups	21	252962.66	12045.84	

*p<.05

**p<.01

***p<.001

Table J1

Scheffe Test at the 0.05 Level
for the Effects on Goal Attainment

Covariants	N	Means	SD	Groups*	G1	G2	G3	G4	G5	G6
Conditions Effects (Self-Set-Goal Conditions By Methods of Payment)										
High Need	17	-19.1706	98.8952	Hard G.P.R. (1)						
for Money	14	-2.9107	121.2390	Hard G.H.R. (2)						
	15	90.8933	87.7071	Easy G.P.R. (3)						
	15	-20.1033	144.8197	Easy G.H.R. (4)						
	13	-25.7265	169.6612	Free G.P.R. (5)						
	9	-69.3033	143.4182	Free G.H.R. (6)						
Low Need	6	75.3750	196.1431	Hard G.P.R. (1)						
for Money	9	-34.2311	103.8477	hard G.H.R. (2)						
	8	-94.7250	398.4558	Easy G.P.R. (3)						
	8	100.8638	106.8173	Easy G.H.R. (4)						
	10	71.4610	146.5388	Free G.P.R. (5)						
	14	54.7386	82.4679	Free G.H.R. (6)						

* No Pairs of Groups Are Significantly Different From Each Other
At the 0.05 Level

a considerably higher level of goal attainment was obtained under the easy-goal hourly-rate condition than under all other conditions. However, according to the Scheffe test, there were no significant differences in goal attainment among the experimental groups, neither for high-need-for-money subjects, nor for low-need-for-money subjects. This is probably due to the unequal variance among the experimental groups at either high-, or low-need-for-money effects.

To offer additional explanation to the "conditions effects," variations in goal attainment were examined through breaking the data by levels of both methods of payment and need for money. Table 32 shows that there is a significant variation in goal attainment for high-need-for-money subjects only under the piece-rate plans, whereas there is a significant variation in goal attainment for low-need-for-money subjects only under the hourly rate plans.

That is, Table 33 shows that--under the application of piece-rate plans--for high-need-for-money subjects, significantly higher level of goal attainment was obtained under the easy-goal condition than under the hard-, or the free-choice-goal conditions. However, under the application of hourly-rate plans, although high-need-for-money subjects attained their goals better under the hard-goal condition than under either the easy- or free-choice

Table 32

The Simple Effects on Goal Attainment
(Variations in Goal Attainment Among Goal Conditions
by Methods of Payment and Need-for-Money Levels)

Sources of Variations	DF	Sum of Squares	Mean Squares	F-Ratio
Conditions Effects (Self-set-Goal Conditions)				
1. High Need for Money				
1. Piece-Rate				**
Between Groups	2	127792.05	63896.02	4.402
Within Groups	42	609598.49	14514.24	
2. Hourly-Rate				
Between Groups	2	21799.50	10899.75	.587
Within Groups	35	649254.29	18550.12	
2. Low Need for Money				
1. Piece-Rate				
Between Groups	2	149965.60	74982.80	1.051
Within Groups	21	1496992.62	71285.36	
2. Hourly-Rate				**
Between Groups	2	82248.209	41124.10	4.523
Within Groups	21	254556.771	9091.31	

**p<.01

Table 33

The Scheffe Test at 0.05 Level for the Effects
on Goal Attainment

Covariants	N	Means	SD	Groups	G5	G1	G3
High Need for Money	Methods of Payment						
	1. Piece-Rate						
	13	-25.7269	169.66	Free G.P.R. (5)			
	17	-19.1706	98.89	Hard G.p.R. (1)			
	15	90.8933	87.7071	Easy G.P.R. (3)	(*)	(*)	
				Groups	G2	G4	G6
	2. Hourly-Flat-Rate						
	14	-2.9107	121.23	Hard G.H.R. (2)			
	15	-20.1033	144.819	Easy G.H.R. (4)			
	9	-69.3033	143.4182	Free G.H.R. (6)			
Low Need for Money	Methods of Payment			Groups	G1	G3	G5
	1. Piece-Rate						
	6	75.3750	196.14	Hard G.P.R. (1)			
	8	-94.7250	398.45	Easy G.P.R. (3)			
	10	71.4610	146.53	Free G.P.R. (5)			
				Groups	G2	G6	G4
	2. Hourly-Flat-Rate						
	9	-34.2311	103.8477	Hard G.H.R. (2)			
	14	54.7386	82.46	Free G.H.R. (6)			
	8	100.8638	106.81	Easy G.H.R. (4)	(*)		

(*) Denotes Pairs of Groups Significantly Different From Each
Other At the 0.05 Level

goal-condition, the Scheffe test shows that there were no significant differences in goal attainment among goal conditions. On the other hand, for low-need-for-money subjects, under the application of hourly-rate plans, the easy-goal condition (condition 4) was significantly superior in goal attainment than the hard-goal condition (condition 2) (see Table 33). In addition, the contrast analysis shows that the free-choice-goal condition (condition 6) shows significantly higher goal attainment than the hard-goal condition (condition 2) (see Table 34).

Under the application of piece-rate plans, however, considerably higher goal attainment was obtained under both the hard-goal condition and the free-choice-goal condition than under the easy-goal condition. However, the Scheffe test shows no significant differences in goal attainment among these groups which is probably due to the unequal variance among them.

Figures 12a and 12b show this result graphically. The three-way interaction of methods of payment, self-set-goal conditions, and need for money is evident since the lines connecting the goal attainment means--over the treatment conditions--for high-need-for-money subjects and for low-need-for-money subjects are not parallel to each other.

Although there is no specific hypothesis regarding the effect of the interaction of methods of payment, need for money, and self-set-goal conditions on goal attainment, the

Table 34

The Simple Contrast for the Effects On Goal Attainment
(for Low-Need-for-Money Subjects Under The Hourly-Rate)

Contrasts	Value	S Error	Df	T-Value
Contrast 1 (Hard G. Vs Easy G.)	135.0949	46.33	28	2.916 **
Contrast 2 (Hard G. Vs Free G.)	88.9697	40.7373	28	2.184 *
Contrast 3 (Easy G. Vs Free G.)	-46.1252	42.25	28	-1.091

*p<.05

**p<.01

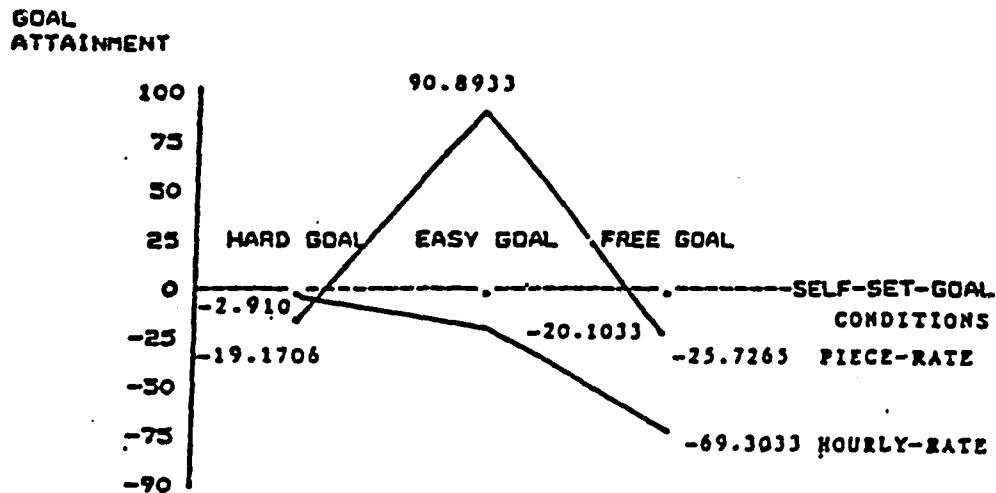


Figure 12A. The impact of the interaction between self-set goal conditions and methods of payment on goal attainment for high need for money subjects

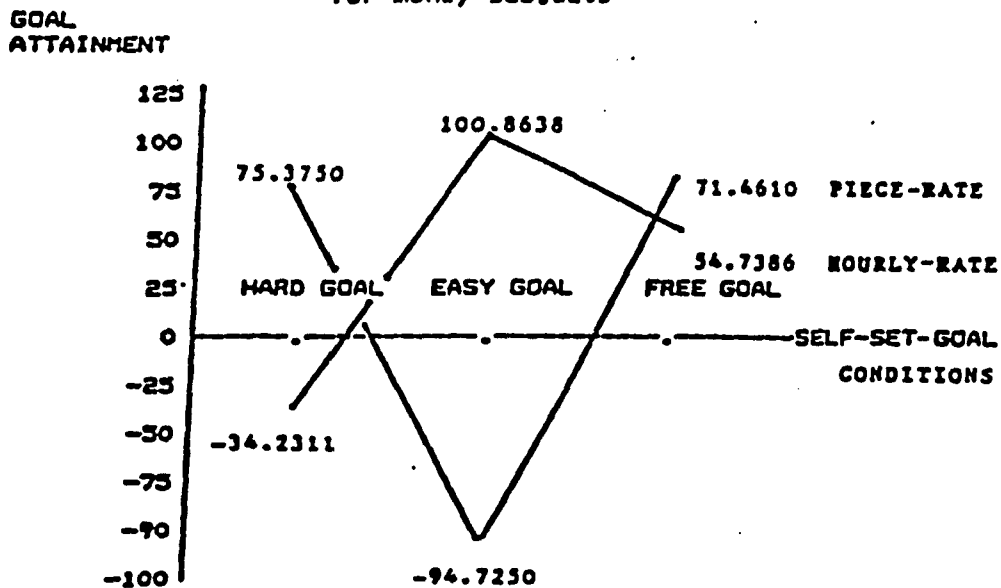


Figure 12B. The impact of the interaction between self-set-goal conditions and methods of payment on goal attainment for low-need-for-money subjects

result obtained seems to offer a partial support to the research arguments. While high-need-for-money subjects show significant response to the piece-rate plans, and low-need-for-money subjects show significant response to the hourly plans, which is in the expected direction, analysis of the simple comparison shows that the specific experimental conditions that are responsible for this result are not the expected ones. In addition, the subgroup analysis shows that low-need-for-money subjects were also responsive to the effect of piece-rate plans. They attained their goals considerably better under the hard-goal and the free-choice-goal conditions than under the easy-goal condition which further complicated the result.

The frequency distribution shows that 84 (out of 138) subjects (about 68%) attained their goals and produced beyond them. Under piece-rate plans, 44 (out of 69) subjects (about 64%) attained their goals and produced beyond them, while under hourly-flat-rate plans, 40 (out of 69) subjects (about 58%) attained their goals and produced beyond them. This shows that higher number of subjects attained their goals under the piece-rate plans than under the hourly-rate plans which is in the expected direction of the research arguments.

Under the hard-goal condition, 24 (out of 46) subjects (about 52%) attained their goals. under the easy-goal

condition, 32 (out of 46) subjects (about 69%) attained their goal, while under the free-choice-goal condition, 28 (out of 46) subjects (about 61%) attained their goal. This shows that as the goal increases in difficulty, the number of subjects who attained their goals decreases. This is not in the expected direction with the research arguments.

The correlation between percentage of personal goal and goal attainment is significantly negative ($r = -.7025$, $p = .0000$). The correlation between magnitude of personal goal and goal attainment is also significantly negative ($r = -.2433$, $p = .002$). This result is not in the expected direction. In addition, the above correlation between percentage of personal goal and goal attainment is very high, which is not desirable. This might explain why the measure of goal attainment has shown almost significant negative relationship with almost all the dependent variables in this research which is not in the expected direction (see the matrix correlation in Appendix B).

C. Satisfaction

MANOVA shows that there is a significant three-way interaction among methods of payment, self-set-goal conditions, and task-specific self-esteem in influencing satisfaction (overall satisfaction--a composite measure of satisfaction with pay, satisfaction with methods of payment, satisfaction with the work, and overall

satisfaction with the job) (see Table 35).

In addition, MANOVA was conducted to see if this significant three-way interaction still existed after removing from the analysis subjects who did not understand the manipulation of methods of payment. This is done because previous analysis (see Tables 5 and 8) shows that removing those subjects from the analysis has caused the significant relationship between methods of payment and overall satisfaction to become non-significant. Table 36, however, shows that removing those subjects from the analysis of MANOVA resulted in no change in the results of Table 35.

The presence of the significant three-way interaction of methods of payment, self-set-goal conditions, and task-specific self-esteem in influencing the overall satisfaction means that variation in overall satisfaction among goal- and methods-of- payment conditions will not be the same for high- and for low- task-specific-self-esteem subjects (conditions effects). In addition, this significant interaction might also mean that there are "task-specific-self-esteem effects" (i.e., significant differences in satisfaction between high- and low-task-specific-self-esteem subjects at each experimental condition).

Although this three-way interaction is significant in

Table 35

MANOVA Results for the Effects on
Overall Satisfaction

Sources of Variation	Sum of Squares	DF	Mean Squares	F-Ratio
Within + Residuals	22345.36	168	133.01	
Self-Esteem (SE)	159.59	1	159.59	1.20
Methods of Payment (MP)	611.75	1	611.75	4.60 *
Self-Set-Goal Conditions (SSGC)	446.88	3	148.96	1.12
MP by SSGC	295.03	3	98.34	.74
MP by SE	71.72	1	71.72	.54
SSGC by SE	338.85	3	112.95	.85
MP by SSGC by SE	20.34	3	6.78	.05
Within + Residuals	21365.28	168	127.17	
Task-Specific Self-Esteem (TSSE)	325.26	1	325.26	2.56
Methods of Payment (MP)	36.60	1	36.60	.29
Self-Set-Goal Conditions (SSGC)	40.67	3	13.60	.11
MP by SSGC	1232.48	3	410.83	3.23 *
MP by TSSE	12.56	1	12.56	.10
SSGC by TSSE	68.53	3	22.84	.18
MP by SSGC by TSSE	1159.22	3	386.41	3.04 *
Within + Residuals	22243.92	168	132.40	
Need for Money (NM)	.06	1	.06	.984
Self-Set-Goal Conditions (SSGC)	160.22	3	53.41	.751
Methods of Payment (MP)	18.94	1	18.94	.706
MP by SSGC	256.67	3	85.56	.586
MP by NM	26.82	1	26.82	.653
SSGC by NM	326.53	3	108.84	.483
MP by SSGC by NM	320.80	3	106.93	.491

*P<.05

**P< .01

***p<.001

Table 36

MANOVA Results for the Effects on
Overall Satisfaction After Removing those
Subjects Who Did not Understand the Manipulation of MP

Sources of Variation	Sum of Squares	DF	Mean Squares	F-Ratio
Within + Residuals	22075.87	163	135.43	
Self-Esteem (SE)	176.87	1	176.67	1.31
Methods of Payment (MP)	539.50	1	539.50	3.98 *
Self-Set-Goal Conditions (SSGC)	469.39	3	156.46	1.16
MP by SSGC	219.47	3	73.16	.54
MP by SE	81.58	1	81.58	.60
SSGC by SE	355.82	3	118.61	.88
MP by SSGC by SE	21.94	3	7.31	.05
Within + Residuals	21090.02	163	129.39	
Task-Specific Self-Esteem (TSSE)	337.89	1	337.89	2.61
Methods of Payment (MP)	37.06	1	37.06	.29
Self-Set-Goal Conditions (SSGC)	37.80	3	12.60	.10
MP by SSGC	1230.79	3	410.26	3.17 *
MP by TSSE	14.28	1	14.28	.11
SSGC by TSSE	64.67	3	21.58	.17
MP by SSGC by TSSE	1185.42	3	395.14	3.05 *
Within + Residuals	21968.58	163	134.78	
Need for Money (NM)	1.72	1	1.72	.01
Self-Set-Goal Conditions (SSGC)	24.51	1	24.51	.18
Methods of Payment (MP)	200.00	3	66.67	.49
MP by SSGC	259.36	3	86.45	.64
MP by NM	11.45	1	11.45	.08
SSGC by NM	370.18	3	123.39	.92
MP by SSGC by NM	340.08	3	113.36	.86

*p<.05

**p<.01

***p<.001

influencing satisfaction, analysis of variance (see Table 37) shows that there is no significant variation in overall satisfaction due to goal- and methods-of-payment conditions for high- and for low-task-specific-self-esteem subjects.

Table 37 shows that there was also no significant variation in overall satisfaction due to "task-specific-self-esteem effect" at any experimental condition. However, in the easy-goal-hourly-flat-rate condition (condition 4), the difference between high-task-specific-self-esteem subjects and low-task-specific-self-esteem subjects in overall satisfaction is only marginally insignificant ($P = .06$) (see Table 37).

With respect to high-task-specific-self-esteem subjects, although almost all the means were in the expected direction, the Scheffe test shows that there were no significant differences in overall satisfaction between any pairs of groups (see Table 38). Therefore, this result offers a partial support to Hypothesis 2 concerning variation in overall satisfaction among the self-set-goal- and method-of-payment conditions for high-task-specific-self-esteem subjects.

For low-task-specific-self-esteem subjects, the overall satisfaction means are not in the expected direction as hypothesized since higher satisfaction is obtained under the easy-goal-piece-rate plans than under the hard-goal-piece-rate plans. This result is plotted on

Table 37

**The Simple Effects on Overall Satisfaction
(Variation in Overall Satisfaction Among Goal and Methods
of Payment Conditions for High and for Low Task-Specific-Self-
Esteem Subjects)**

Dependent Variables	Sources	DF	Sum of Squares	Mean Squares	F- Ratio
Overall Satisf- action	A. Conditions Effects (Self-Set Goal-Conditions By Methods of Payment):				
	1. High Task-Specific Self-Esteem:				
	Between Groups	7	604.7500	86.39	.664
	Within Groups	75	9747.85	129.97	
	2. Low Task-Specific Self-Esteem:				
	Between Groups	7	1397.49	199.64	1.511
	Within Groups	93	12281.59	132.06	
	B. Task-Specific-Self-Esteem Effects:				
	1. Hard-Goal-Piece-Rate Condition				
	Between Groups	1	60.90	60.90	.389
	Within Groups	21	3286.57	156.50	
	2. Hard-Goal-Hourly-Rate Condition				
	Between Groups	1	14.80	14.80	.122
	Within Groups	21	2542.84	121.08	
3. Easy-Goal-Piece-Rate Condition					
Between Groups	1	288.26	288.26	2.500	
Within Groups	21	2420.60	115.26		
4. Easy-Goal-Hourly-Rate Condition					
Between Groups	1	346.67	346.67	3.799	
Within Groups	21	1915.93	91.23		
5. Free-Choice-Goal-Piece-Rate Condition					
Between Groups	1	136.60	136.60	.972	
Within Groups	21	2949.39	140.44		
6. Free-Choice-Goal-Hourly-Rate Condition					
Between Groups	1	.7302	.7302	.008	
Within Groups	21	1829.26	87.10		
7. No-Goal-Piece-Rate Condition					
Between Groups	1	82.3452	82.3452	.480	
Within Groups	21	3599.39	171.39		
8. No-Goal-hourly-Rate Condition					
Between Groups	1	72.31	72.31	.485	
Within Groups	21	3485.42	165.97		

*p<.05
**p<.01
***p<.001

Table 38

Scheffe Test at the 0.05 Level
for the Effects on Overall Satisfaction

Covariants	N	Means	SD	Groups*	G1	G2	G3	G4	G5	G6	G7	G8
Conditions Effects (Self-Set-Goal Conditions By Methods of Payment)												
High Task-	11	67.0909	12.02	Hard G.P.R.(1)								
Specific	11	61.2727	11.84	Hard G.H.R.(2)								
Self-	9	58.8889	10.82	Easy G.P.R.(3)								
Esteem	7	63.0000	13.22	Easy G.H.R.(4)								
	11	63.5455	11.27	Free G.P.R.(5)								
	9	59.2222	7.66	Free G.H.R.(6)								
	12	65.3333	10.87	No G. P .R.(7)								
	13	60.9231	12.40	No G. H. R.(8)								
Low Task-	12	63.8333	12.93	Hard G.P.R.(1)								
Specific	12	59.6667	10.18	hard G.H.R.(2)								
Self-	14	66.1429	10.68	Easy G.P.R.(3)								
Esteem	16	54.5625	7.59	Easy G.H.R.(4)								
	12	58.6667	72.35	Free G.P.R.(5)								
	14	58.8571	10.22	Free G.H.R.(6)								
	11	61.5455	15.16	No G. P.R.(7)								
	10	64.5000	13.39	No G. H.R.(8)								

* According to Scheffe Test No Pairs of Groups Are Significantly Different From Each Other At the 0.05 level

Figures 13a and 13b. The three-way interaction is evident since the line connecting the overall satisfaction means over the treatment conditions for high-and for low-task-specific-self-esteem subjects are not parallel to each other.

According to Keppel, 1982, further analysis should not be conducted since there is no significant variation in overall satisfaction over the treatment conditions for high- and for low-task-specific-self-esteem subjects.

MANOVA was also conducted to see if there is any interaction among methods of payment, self-set-goal conditions, and self-esteem (as well as need for money) in influencing the components of satisfaction, i.e., satisfaction with overall job, satisfaction with work, and satisfaction with pay, separately.

MANOVA shows that there is a significant three-way interaction between methods of payment, self-set-goal conditions, and task-specific self-esteem in influencing only satisfaction with the work (see Table 39). All the other components of overall satisfaction are not significant.

The simple effect (the analysis of the interaction between methods of payment and goal conditions at each level of task-specific self-esteem) shows that there is no significant variation in satisfaction with the work among methods-of-payment and goal conditions for high- and for

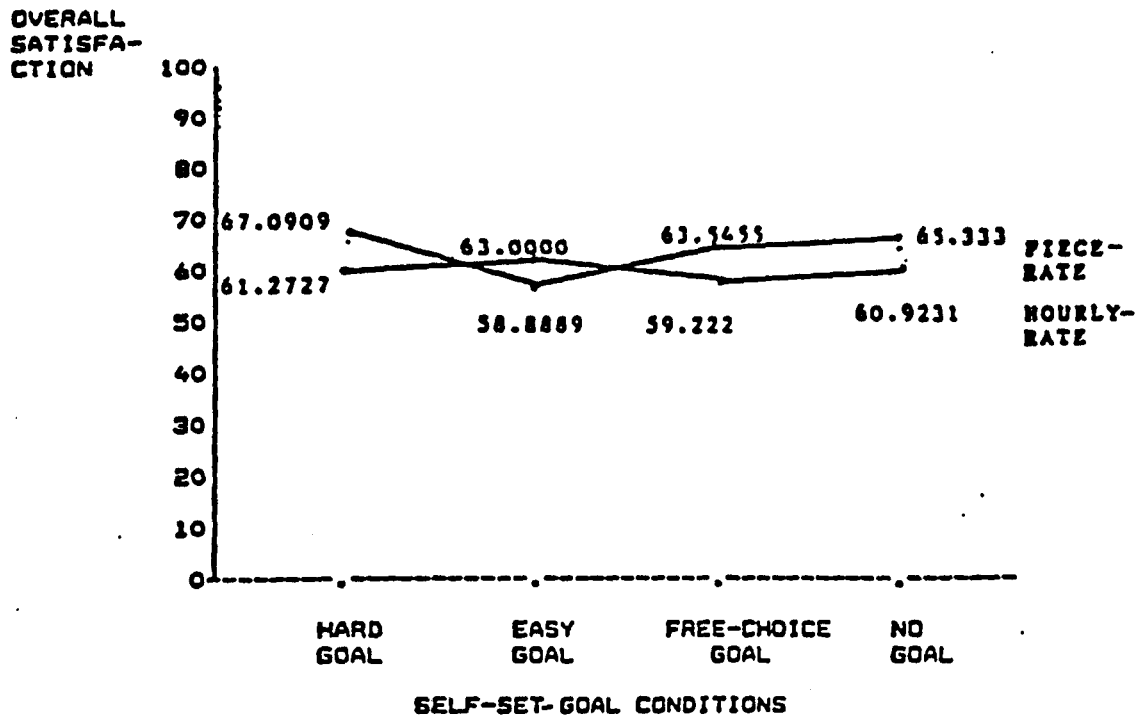


Figure 13A. The impact of the interaction between self-set-goal conditions and methods of payment on overall satisfaction for high-task-specific-self-esteem subjects

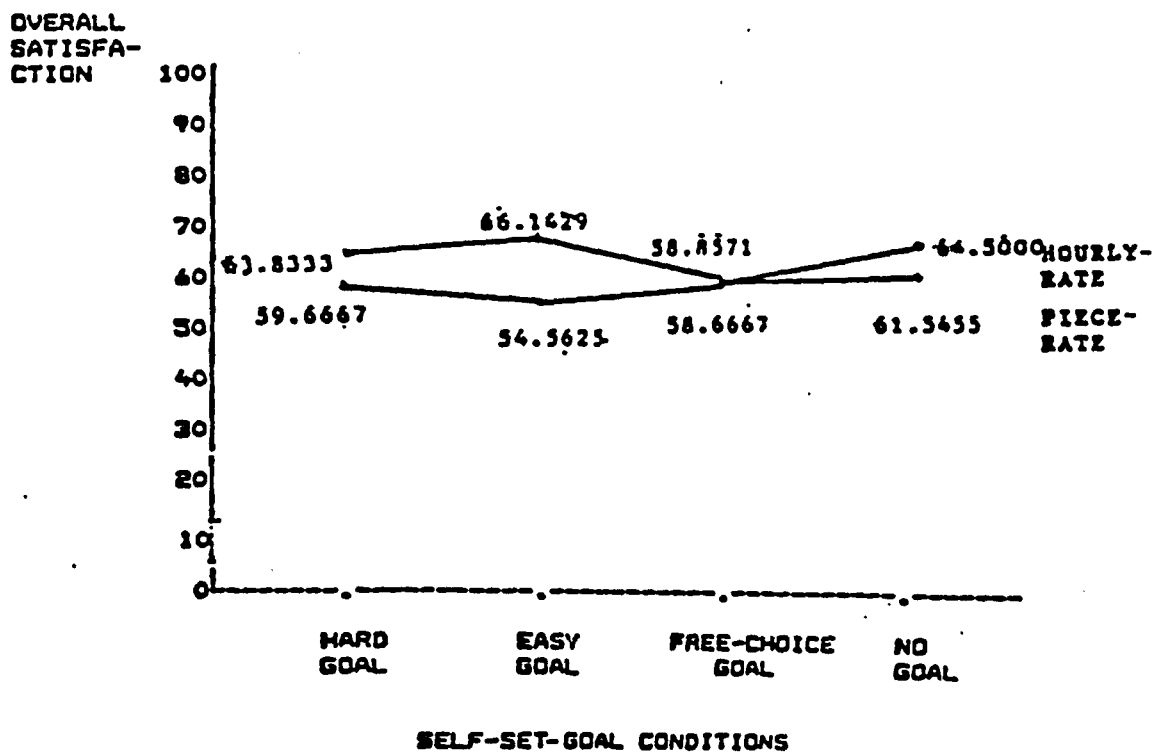


Figure 13B. The impact of the interaction between self-set-goal conditions, and methods of payment on overall satisfaction for low-task-specific-self-esteem subjects

Table 39

MANOVA Results for the Effects on Satisfaction
with Work

Sources of Variation	Sum of Squares	DF	Mean Squares	F-Ratio
Within + Residuals	8770.55	168	52.21	
Self-Esteem (SE)	68.09	1	68.09	1.30
Methods of Payment (MP)	142.94	1	142.94	2.74
Self-Set-Goal Conditions (SSGC)	106.77	3	35.59	.68
MP by SSGC	60.69	3	20.23	.39
MP by SE	6.85	1	6.85	.13
SSGC by SE	80.40	3	26.80	.51
MP by SSGC by SE	44.47	3	14.82	.28
Within + Residuals	8358.66	168	49.75	
Task-Specific-Self Esteem (TSSE)	21.29	1	21.29	.43
Methods of Payment (MP)	84.59	1	84.59	1.70
Self-Set-Goal Conditions (SSGC)	17.43	3	5.81	.12
MP by SSGC	482.74	3	160.91	3.23 *
MP by TSSE	66.56	1	66.56	1.34
SSGC by TSSE	17.91	3	5.97	.12
MP by SSGC by TSSE	468.97	3	156.32	3.14 *
Within + Residuals	8733.66	168	51.99	
Need for Money (NM)	30.56	1	30.56	.59
Self-Set-Goal Conditions (SSGC)	2.52	1	2.52	.05
Methods of Payment (MP)	51.01	3	17.00	.33
MP by SSGC	41.50	3	13.83	.27
MP by NM	6.88	1	6.88	.13
SSGC by NM	135.59	3	45.20	.87
MP by SSGC by NM	19.58	3	6.53	.13

*P<.05

**P<.01

***p<.001

low-task-specific-self-esteem subjects. In other words, there was no "conditions effect" (see Table 40).

With respect to "task-specific-self-esteem effect," Table 40 shows that there is a significant variation due to task-specific-self-esteem effect under both the easy-goal-piece-rate condition (condition 3), and the easy-goal-hourly-rate condition (condition 4). That is, at the easy-goal-piece-rate condition, low-task-specific-self-esteem subjects are more satisfied with the work than high-task-specific-self-esteem subjects; whereas, at the easy-goal-hourly-rate condition, high-task-specific-self-esteem subjects show greater satisfaction with the work than low-task-specific-self-esteem subjects.

Figures 14a and 14b show this result graphically. The interaction is evident since the lines connecting the satisfaction with the task means--over the treatment conditions--for high- and for low-task-specific-self-esteem subjects are not parallel to each other.

It should be noted that the overall satisfaction correlated significantly positively with percentage of personal goal ($r = .1617$, $p = .029$), magnitude of personal goal ($r = .1943$, $p = .011$), and goal commitment ($r = .2656$, $p = .001$). In addition, the correlation is positively significant between productivity and the following variables: satisfaction with pay ($r = .1963$, $p < .05$),

Table 40

**The Simple Effects on Satisfaction With Work
(Variation in Satisfaction With Work Among Goal and Methods
of Payment Conditions for High and for Low Task-Specific-Self-
Esteem Subjects)**

Dependent Variables	Sources	DF	Sum of Squares	Mean Squares	F-Ratio
Satisf- action With Work	A. Conditions Effects (Self-Set-Goal Conditions By Methods of Payment):				
	1. High Task-Specific Self-Esteem:				
	Between Groups	7	277.2457	39.60	.846
	Within Groups	75	3511.30	46.81	
	2. Low Task-Specific Self-Esteem:				
	Between Groups	7	520.6853	74.38	1.409
	Within Groups	93	4907.11	52.76	
	B. Task-Specific-Self-Esteem Effects:				
	1. Hard-Goal-Piece-Rate Condition				
	Between Groups	1	.2770	.27	.004
	Within Groups	22	1279.46	60.92	
	2. Hard-Goal-Hourly-Rate Condition				
Between Groups	1	15.65	15.65	.302	
Within Groups	22	1085.30	51.68		
3. Easy-Goal-Piece-Rate Condition					
Between Groups	1	253.43	253.43	5.100	
Within Groups	22	1043.43	49.26		
4. Easy-Goal-Hourly-Rate Condition					
Between Groups	1	171.67	171.83	4.839	
Within Groups	22	744.93	35.47		
5. Free-Choice-Goal-Piece-Rate Condition					
Between Groups	1	68.19	68.19	1.456	
Within Groups	22	983.46	46.83		
6. Free-Choice-Goal-Hourly-Rate Condition					
Between Groups	1	6.2888	6.28	.130	
Within Groups	22	1012.92	48.23		
7. No-Goal-Piece-Rate Condition					
Between Groups	1	19.61	19.61	.490	
Within Groups	22	840.30	40.01		
8. No-Goal-hourly-Rate Condition					
Between Groups	1	17.23	17.23	.253	
Within Groups	22	1428.59	68.02		

*p<.05
**p<.01
***p<.001

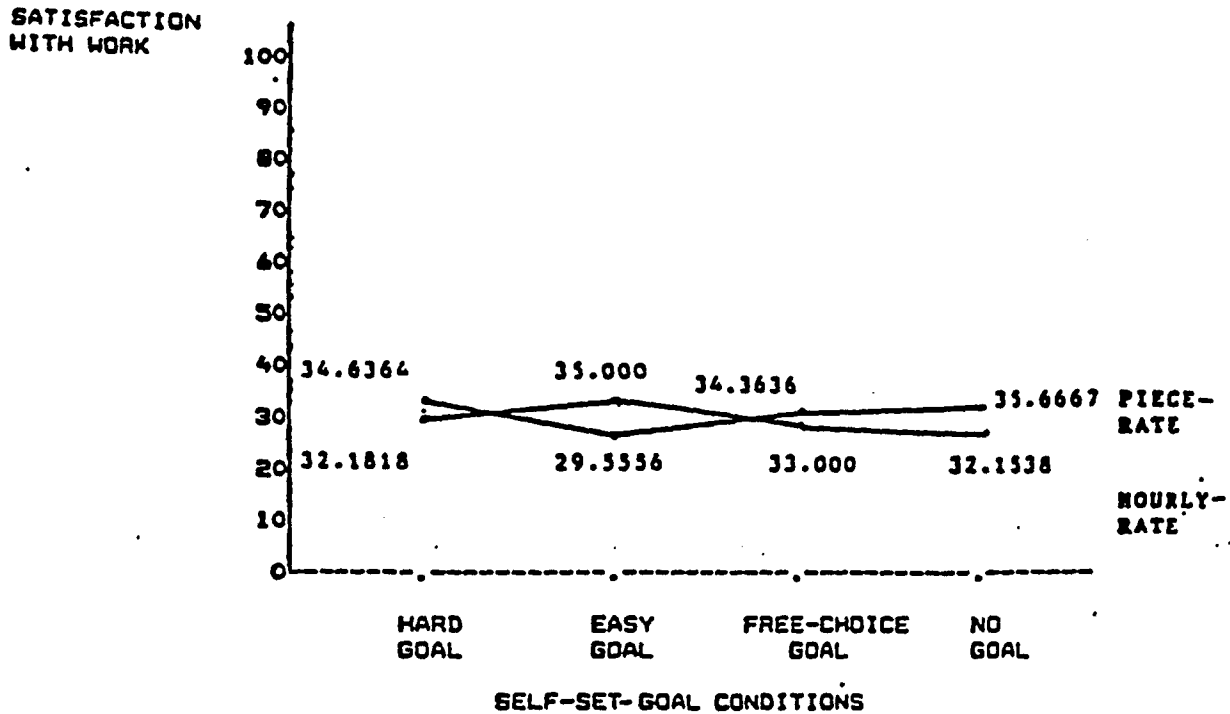


Figure 14A. The impact of the interaction between self-set-goal conditions and methods of payment on satisfaction with work for high-task-specific-self-esteem subjects

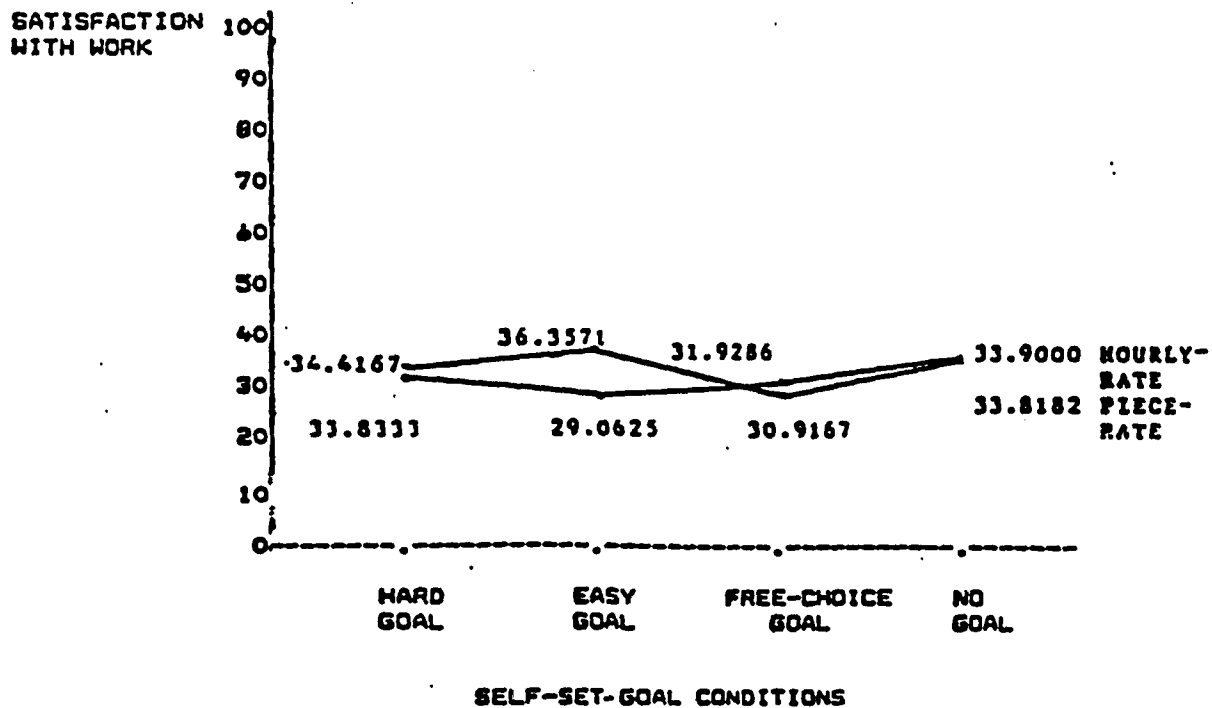


Figure 14B. The impact of the interaction between self-set-goal conditions, and methods of payment on satisfaction with work for low-task-specific-self-esteem subjects

satisfaction with methods of payment ($r = .2696$, $p < .01$), and satisfaction with the job ($r = .2224$, $p < .01$). These correlations are in the expected direction with the research arguments, holding the individual differences constant.

Table 41 shows the correlation between overall satisfaction and several dependent variables for high- and for low-task-specific-self-esteem subjects. According to Table 41, there was significantly positive relationships between overall satisfaction and both goal commitment and perceived total valence of job performance, for high- and for low-task-specific-self-esteem subjects. However, these correlations are stronger for high-task-specific-self-esteem subjects than for low-task-specific-self-esteem subjects which is in the expected direction. In addition, there was a significant positive correlation between overall satisfaction and magnitude of personal goal only for high-task-specific-self-esteem subjects, but not for low-task-specific-self-esteem subjects which is also in the expected direction. Moreover, there was a significant positive correlation between overall satisfaction and productivity only for low-task-specific-self-esteem subjects but not for high-task-specific-self-esteem subjects, and this correlation is significantly higher for the former subjects than equivalent correlation for the latter. This result suggests that task-specific self-

Table 41

The Correlations Between Overall Satisfaction (OS)
and the Dependent Variables for High- and for Low-Task-
Specific-Self-Esteem Subjects (TSSE)

Dependent Variables	Correlations Between OS and the Dependent Variables	
	High TSSE	Low TSSE
Percentage of Personal Goal (PPG)	.1492	.1495
Productivity	-.1048	.2818a
Goal Commitment	.3098	.2178
Magnitude of Personal Goal	.256	.1258
Total Valences of Job Performance	.3936	.314

*p<.05 **p<.01 ***p<.001
a Significantly higher (P<.01) than equivalent correlation for high-TSSE subjects. Tested by difference in Fisher's zs.

esteem moderates the relationship between productivity and overall satisfaction. However, this result is not in the expected direction.

Self-esteem is found to be a moderator of the relationship between overall satisfaction and the following variables: productivity, total valences of job performance, and total valences of outcomes (see Table 42). These correlations are significantly higher for high-self-esteem subjects than equivalent correlations for low-self-esteem subjects which is in the expected direction of the research arguments.

Table 42

The Correlations Between Overall Satisfaction (OS)
and the Dependent Variables for High- and
for Low-Self-Esteem Subjects

Dependent Variables	Correlations Between OS and the Dependent Variables	
	High Self-Esteem	Low Self-Esteem
Percentage of Personal Goal	.2306 [*]	.1671
Magnitude of Personal Goal (MPG)	.1490 ^{**}	.2654 [*]
Productivity	.263a ^{***}	-.0870
Goal Commitment	.3314 ^{***}	.2076
Total Valences of Job Performance	.4359a ^{**}	.1880
Total Valences	.2271a	-.0538

*p<.05 **p<.01 ***p<.001

a Significantly higher (p<.05) than equivalent correlations of low self-esteem subjects. Tested by difference in Fisher's zs.

Perceived expectancy that high effort will lead to high productivity

H3: A two-way interaction between self-set-goal conditions and self-esteem in influencing perceived expectancy is expected with the following components:

- A. For high-self-esteem subjects, there will be no significant differences in perceived expectancy (that high effort will lead to high productivity) among self-set-goal conditions.
- B. For low-self-esteem subjects, perceived expectancy (that high effort will lead to high productivity) will be significantly lower under the hard-goal condition than under either the free-choice-goal condition, the easy-goal condition, or the no-goal condition.
- C. There will be a significantly positive relationship between perception of expectancy and either personal goals, or productivity, and this relationship should be:
 - 1. Especially higher under the hard-goal condition than under either the easy-goal condition, the free-choice-goal condition, or the no-goal condition.
 - 2. Especially higher for high-self-esteem subjects than for low-self-esteem subjects.

To test Hypothesis 3, MANOVA shows that there is a significant two-way interaction between need for money and self-set-goal conditions in influencing perceived expectancy. MANOVA (see Table 43) shows also that task-specific self-esteem, independent of methods of payment and goal conditions, influences perceived expectancy. The correlation between expectancy and task-specific self-esteem is positive and significant ($r = .2709$, $p = .000$)

Table 43

MANOVA Results for the Effects on Perceived Expectancy

Sources of Variation	Sum of Squares	DF	Mean Squares	F-Ratio
Within + Residuals	591.09	168	3.52	
Self-Esteem (SE)	.34	1	.34	.10
Methods of Payment (MP)	.17	1	.17	.05
Self-Set-Goal Conditions (SSGC)	27.45	3	9.15	2.60
MP by SSGC	18.41	3	6.14	1.74
MP by SE	.04	1	.04	.01
SSGC by SE	4.39	3	1.46	.42
MP by SSGC by SE	7.15	3	2.38	.68
Within + Residuals	542.16	168	3.23	
Task-Specific Self-Esteem (TSSE)	43.00	1	43.00	13.32 ***
Methods of Payment (MP)	5.94	1	5.94	1.84
Self-Set-Goal Conditions (SSGC)	6.74	3	2.25	.70
MP by SSGC	9.13	3	3.04	.94
MP by TSSE	6.08	1	6.08	1.88
SSGC by TSSE	4.31	3	1.44	.45
MP by SSGC by TSSE	10.15	3	3.38	1.05
Within + Residuals	558.42	168	3.32	
Need for Money (NM)	2.26	1	2.26	.68
Self-Set-Goal Conditions (SSGC)	21.88	3	7.29	2.19
Methods of Payment (MP)	3.47	1	3.47	1.04
MP by SSGC	13.20	3	4.40	1.32
MP by NM	3.96	1	3.96	1.19
SSGC by NM	27.26	3	9.09	2.73 *
MP by SSGC by NM	5.87	3	1.96	.59

*P<.05

**P<.01

***p<.001

meaning that high task-specific self-esteem subjects have significantly higher perception of expectancy (that high effort leads to high productivity) than low task-specific self-esteem subjects. This result is in agreement with Hypothesis 3 regarding the relationship between perceived expectancy and task-specific self-esteem, holding the effects of goal conditions constant.

The significant two-way interaction between need for money and self-set-goal conditions means that there are different goal conditions effects--on perceived expectancy--for high- and for low-need-for-money subjects (conditions effects). In addition, this interaction might also mean that there are "need-for-money effects" for the four-goal conditions (need-for-money effects).

Analysis of the simple effect (variation in expectancy among goal conditions at each level of need-for-money measure) shows that there are significant differences due to goal conditions only for low-need-for-money subjects, but not for high-need-for-money-subjects (see the upper part of Table 44). In addition, Table 44 shows also that there is a "need-for-money effect" only at the hard-goal condition.

Scheffe's test (see Table 45) shows that for high-need-for-money subjects there is no significant variation in perceived expectancy among goal conditions. However, for low-need-for-money subjects, there is a significant

Table 44
The Simple Effects on Perceived Expectancy

Dependant Variables	Sources	DF	Sum of Squares	Mean Squares	F-Ratio
Perceived Expectancy	A. Conditions Effects (Self-Set-Goal Conditions):				
	1. High Need for Money				
	Between Groups	3	31.2684	10.4228	2.4897
	Within Groups	102	427.005	4.186	
	2. Low Need for Money				
	Between Groups	3	17.8377	5.9459	2.763*
	Within Groups	74	159.2007	2.1514	
	B. Need-for-Money Effects:				
	1. Hard-Goal Condition				
	Between Groups	1	28.6624	28.6624	6.8488**
	within Groups	44	184.1419	4.1850	
	2. Easy-Goal Condition				
	Between Groups	1	2.8761	2.8761	.8167
	Within Groups	44	154.9500	3.5261	
	3. Free-Choice-Goal Condition				
	Between Groups	1	1.5817	1.5817	.3390
	Within Groups	44	205.2879	4.6656	
	4. No-Goal condition				
	Between Groups	1	.5435	.5435	.5717
	Within Groups	44	41.8261	.9506	

*p<.05

**p<.01

***p<.001

Table 45
The Scheffe Test at the 0.05 Level for the Effects
on Perceived Expectancy

Dependent Variables	Covariants	N	Means	SD	Groups	G1 G2 G3 G4			
Perceived Expectancy	1. High	31	8.5161	2.3926	Hard Goal(1)				
	Need	30	8.6000	2.0443	Easy Goal(2)				
	for	22	8.5455	2.3038	Free Goal(3)				
	Money	23	9.8696	1.0137	No Goal (4)				
	2. Low	15	10.2000	.9411	Hard Goal(1)				*
	Need	16	9.1250	1.5000	Easy Goal(2)				
	for	24	8.9167	2.0198	Free Goal(3)				
	Money	23	9.6522	.9346	No Goal (4)				

* Denotes Pairs of Groups Significantly Different From Each Other
at the 0.05 Level.

variation in expectancy among goal conditions. The hard-goal condition shows significantly higher expectancy than the free-choice-goal condition. In addition, the contrast analysis (see Table 46) shows also that perceived expectancy is significantly higher under the hard-goal condition than under the easy-goal condition.

Moreover, analysis of variance shows that perceived expectancy of low-need-for-money subjects is significantly higher in the hard-goal condition than perceived expectancy of high-need-for-money-subjects in the same condition.

Thus, variation in expectancy among goal conditions shows up only for low-need-for-money subjects, but not for high-need-for-money-subjects. In addition, although low-need-for-money subjects have higher expectancy than high-need-for-money-subjects in all goal conditions, analysis of variance shows that this difference is only significant under the hard-goal condition.

Figure 15 shows the result graphically. The interaction is evident since the lines connecting the expectancy means (over goal conditions) for high- and for low-need-for-money subjects are not parallel to each other.

According to this result, Hypothesis 3 (parts A and B) is not supported. There was no significant two-way interaction between self-esteem and goal conditions in influencing expectancy. Need for money showed significant interaction with goal conditions, instead. In addition,

Table 46

The Simple Contrast for the Effects on Perceived
Expectancy

Covariants	Contrasts	Values	DF	S. Error	T-Value
Low Need For Money	Contrast 1 (Hard-Goal Condition Vs Easy-Goal Condition)	1.0750	74	0.5271	2.039 *
	Contrast 2 (Hard-Goal Condition Vs Free-Goal Condition)	1.2833	74	0.4828	2.658 **
	Contrast 3 (Easy-Goal Condition Vs Free-Goal Condition)	-0.2083	74	0.4734	-0.440
High Need For Money	Contrast 1	-.0839	102	0.5240	-.160
	Contrast 2	-.0293	102	0.5704	-.051
	Contrast 3	-.0545	102	0.5743	-.095

*p<.05

**p<.01

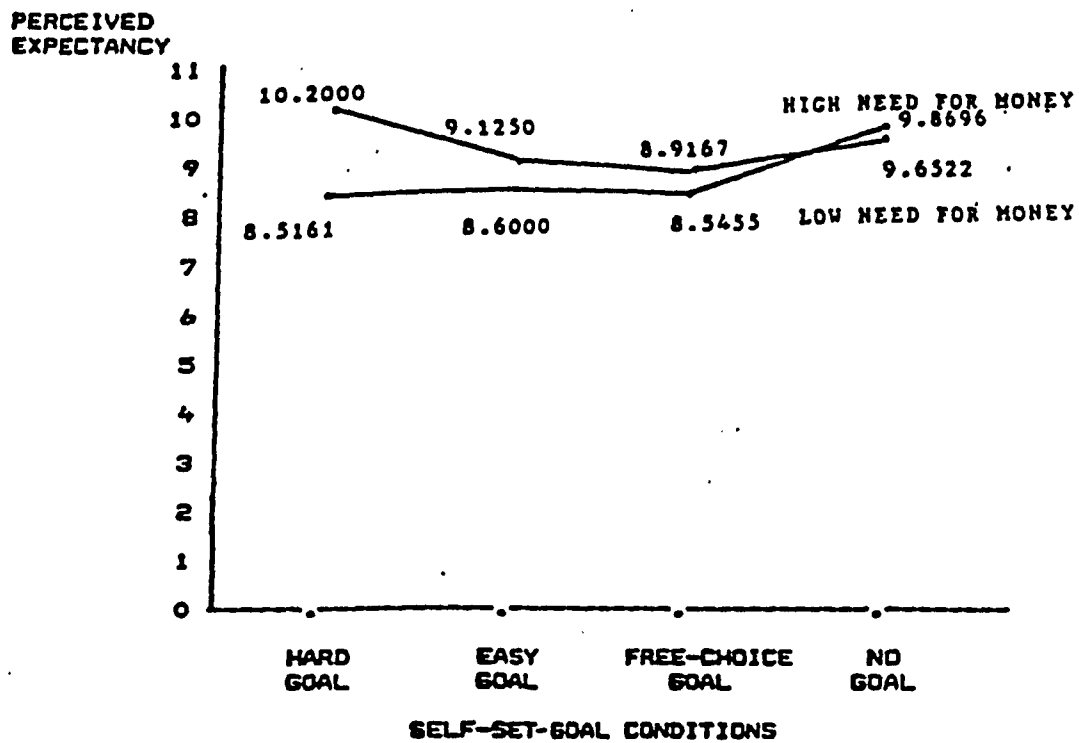


Figure 13. The impact of the interaction of self-set-goal conditions and need for money on perceived expectancy

task-specific self-esteem independently of goal conditions influenced perceived expectancy.

The relationship between expectancy and personal goal

Concerning Hypothesis 3, part C1, Table 47 shows a significant positive relationship between percentage of personal goal and perceived expectancy ($r = .3931$; $p = .003$) under the hard goal condition than under the easy-goal condition. In addition, the relationship between percentage of personal goal and expectancy is stronger under the hard goal condition than under the free-choice-goal condition. However, magnitude of personal goal shows a negative and significant relationship with expectancy under the hard-goal condition, and no significant relationship is found between magnitude of personal goal and expectancy under all other goal conditions.

This result is consistent with Hypothesis 3 C1 concerning the relationship between percentage of personal goal and expectancy, however, this result is not consistent with Hypothesis 3 C1 with respect to magnitude of personal goal.

With respect to Hypothesis 3 C2, both high- and low-self-esteem subjects have positive significant relationship between expectancy and percentage of personal goal, and

Table 47
Correlations Between Expectancy
and Both Personal Goals and Productivity

Self- set Goal Conditions	Correlation Between Percentage of Personal Goal and Expectancy	Correlation Between Magnitude of Personal Goal and Expectancy	Correlation Between Expectancy & productivity
1. Hard- Self- Set Goals	** .3931	* -.2414	.0991
2. Easy- Self- Set Goals	.1462	-.0227	.1809
3. Free- Choice- Self- Set Goals	* .2986	.2101	.1336
4. No- Goals	-----	-----	.1517
Total	*** .280	.002	.057

*p<.05
**p<.01
***p<.001

this relationship is stronger for low-self-esteem subjects than for high-self-esteem subjects. That is, this correlation for low-self-esteem subjects is found to be ($r = .3083$, $p = .009$), whereas, this correlation for high-self-esteem subjects is found to be ($r = .2511$, $p = .01$). Therefore, Hypothesis 3 C1 is not supported with respect to self-esteem.

The relationship between perceived expectancy and productivity

Table 47 shows that there is no significant relationship between perceived expectancy and productivity for each goal condition. This relationship is also not confirmed for either high- or low-self-esteem subjects. Accordingly, Hypothesis 3 (C1 and C2) is not supported with respect to the relationship between expectancy and productivity.

As a conclusion, these results show that there is no relationship between expectancy and productivity, although expectancy is found to be positively related to percentage of personal goal under both the hard-goal condition and the free-choice-goal condition, and negatively related to magnitude of personal goal under the hard-goal condition.

The measure that serves as a proxy measure of expectancy is the "strength of self-efficacy scale." The self-efficacy scale shows that perceived expectancy of

different performance levels (i.e., different levels of task difficulty) is positively and significantly correlated with productivity (see Table 48).

Table 48

Relation of Self-Efficacy (SE) to Productivity
As a Function of Different Levels of Goal difficulty

Self-Efficacy for Different Productivity Levels (Goal Difficulty)	Objective Probability of Goal Attainment	Correlation Between SE and Productivity
1. An Easy Level of Goal (Correctly Coding up to 400 Answers Per 20 Minutes)	1.00	*** .2327
2. A Moderate Level of Goal (Correctly Coding up to 700 answers Per 20 Minutes)	0.60	*** .2485
3. A Difficult Level of Goal (Correctly Coding up to 900 Answers Per 20 Minutes)	0.31	** .1841
4. A Very Difficult Level of Goal (Correctly Coding up to 1100 Answers Per 20 Minutes)	0.22	*** .2188

*p<.05

**p<.01

***p<.001

Perceived total valences of job performance

H4: A three-way interaction among methods of payment, self-set goal conditions, and levels of self-esteem in influencing perceived total valences of job performance is expected with the following components:

A: For high self-esteem, self-set-goal conditions will interact with methods of payment in determining perceived total valences of job performance such that:

A1: Under the application of piece-rate plans, perceived total valences of job performance will be especially higher under the hard-goal condition as compared to the easy-goal condition, free-choice-goal condition, and no-goal condition.

A2: Under the application of hourly-flat-rate plans, perceived total valences of job performance will be slightly higher under the hard-goal condition than under the easy-goal condition, free-choice-goal condition, or no-goal condition.

B: For low self-esteem, self-set goal conditions will interact with methods of payment in determining perceived total valences of job performance such that:

B1: Under the application of piece-rate plans, perceived total valences of job performance will be slightly higher under the hard-goal condition as compared to the easy-goal condition, free-choice-goal condition, or no-goal condition.

B2: Under the application of hourly-flat-rate plans, there will be no significant differences in perceived total valences of job performance under the hard-goal condition, easy-goal condition, free-choice-goal condition, or no-goal condition.

Testing Hypothesis 4, MANOVA (see Table 49) shows

Table 49

**MANOVA Results for the Effects on Perceived Total
Valences of Job Performance**

Sources of Variation	Sum of Squares	DF	Mean Squares	F-Ratio
Within + Residuals	9555441.47	168	56877.63	
Self-Esteem (SE)	21489.29	1	21489.29	.38
Methods of Payment (MP)	74948.86	1	74948.86	1.32
Self-Set-Goal Conditions (SSGC)	102064.87	3	34021.62	.60
MP by SSGC	177040.95	3	59013.65	1.04
MP by SE	10168.45	1	10168.45	.18
SSGC by SE	72504.48	3	24168.16	.42
MP by SSGC by SE	311095.48	3	103698.49	1.82
Within + Residuals	9338059.75	168	55583.69	
Task-Specific Self-Esteem (TSSE)	1836.21	1	1836.21	.03
Methods of Payment (MP)	688.92	1	688.92	.01
Self-Set-Goal Conditions (SSGC)	456548.68	3	152182.89	2.74
MP by SSGC	430067.13	3	143355.71	2.58 *
MP by TSSE	3187.44	1	3187.44	.06
SSGC by TSSE	456797.28	3	152265.76	2.74 *
MP by SSGC by TSSE	379482.93	3	126494.31	2.28
Within + Residuals	9547624.18	168	56831.10	
Need for Money (NM)	200686.43	1	200686.43	3.53
Self-Set-Goal Conditions (SSGC)	215685.42	3	71895.14	1.27
Methods of Payment (MP)	14229.69	1	14229.69	.25
MP by SSGC	272560.59	3	90853.53	1.60
MP by NM	129.94	1	129.94	.00
SSGC by NM	176520.12	3	58840.04	1.04
MP by SSGC by NM	189794.16	3	63264.72	1.11

*p<.05

**p<.01

***p<.001

that there is a significant two-way interaction between self-set-goal conditions and task-specific self-esteem in influencing perceived total valences of job performance [a composite measure of valence of job performance (money), valence of job performance (pride), valence of job performance (entertainment), and valence of job performance (low boredom)].

While the two-way interaction between task-specific self-esteem and self-set-goal conditions is significant, analysis of variance shows that there is no significant variation in perceived total valences of job performance for high- and for low-task-specific self-esteem subjects (i.e., there is no condition effects for high- and for low-task-specific-self-esteem subjects--see Tables 50 and 51). Therefore, no further analysis will be done regarding the conditions' effect.

However, analysis of "task-specific self-esteem effects" for the four-self-set-goal conditions (in influencing perceived total valences of job performance) shows that there is a significant difference in perceived total valence of job performance between high- and low-task-specific-self-esteem subjects only under the free-choice-goal condition (Condition 3). High task-specific self-esteem subjects have higher perception of total valences of job performance than low-task-specific self-esteem subjects only under the free-choice-goal condition

Table 50

The Simple Effects on Perceived Total Valences
of Job Performance

Dependent Variables	Sources	DF	Sum of Squares	Mean Squares	F- Ratio
Perceived Total Valences Job Performance	A. Conditions Effects (Self-Set-Goal Conditions):				
	1. High Task-Specific Self-Esteem				
	Between Groups	3	200166.42	66722.17	1.378
	Within Groups	79	3824310.42	48408.99	
	2. Low Task-Specific Self-Esteem				
	Between Groups	3	284361.83	94787.27	1.504
	Within Groups	79	6111852.91	63008.79	
	B. Task-Specific-Self-Esteem Effects:				
	1. Hard-Goal Condition				
	Between Groups	1	21587.54	21587.54	.494
	Within Groups	44	1998938.27	45430.41	
	2. Easy-Goal Condition				
	Between Groups	1	45695.27	45695.27	.443
	Within Groups	44	4536246.05	103096.50	
	3. Free-Choice-Goal Condition				
	Between Groups	1	228979.26	228979.26	5.8423
	Within Groups	44	1724504.64	39193.28	
	4. No-Goal condition				
	Between Groups	1	133949.45	133949.45	3.5156
	Within Groups	44	1676474.37	38101.61	

*p<.05

**p<.01

***p<.001

Table 51

The Scheffe Test at the 0.05 Level for the Effects
on Perceived Total Valences of Job Performance

Dependent Variables	Covariants	N	Means	SD	Groups*			
					G1	G2	G3	G4
Perceived Total Valences of Job Performance	1. High	22	506.59	234.07	Hard Goal(1)			
	Task-	16	516.12	231.61	Easy Goal(2)			
	Specific	20	591.40	194.02	Free Goal(3)			
	Self- Esteem	25	457.76	219.25	No Goal (4)			
		2. Low	24	549.95	192.04	Hard Goal(1)		
		Task-	30	582.30	358.71	Easy Goal(2)		
		Specific	26	449.07	200.92	Free Goal(3)		
		Self- Esteem	21	566.09	161.67	No Goal (4)		

* No Pairs of Groups Are Significantly Different at the 0.05
Level.

(see Table 50 and Figure 16).

Figure 16 shows this result graphically. The interaction of task-specific self-esteem and self-set-goal conditions is evident since the lines connecting the valences of job- performance means over goal conditions for high- and for low-task-specific-self-esteem subjects are not parallel to each other.

This result offers no support to Hypothesis 4 since the three-way interaction between methods of payment, self-set-goal conditions, and self-esteem in influencing total valences of job performance is not significant.

While self-esteem shows no main or interactive effects to methods of payment and goal conditions concerning perceived total valences of job performance, it is found to moderate the relationship between perceived total valences of job performance and both productivity and overall satisfaction (see Table 52), which is in the expected direction.

In addition, while both high- and low-self-esteem subjects show significant positive relationship between perceived total valences of job performance and satisfaction with work, this relationship is found to be stronger for high-self-esteem subjects than for low-self-esteem subjects, which is also in the expected direction.

Furthermore, while methods of payment show no main or interactive effect in influencing perceived total valences

PERCEIVED
TOTAL
VALENCES
OF JOB
PERFORMANCE

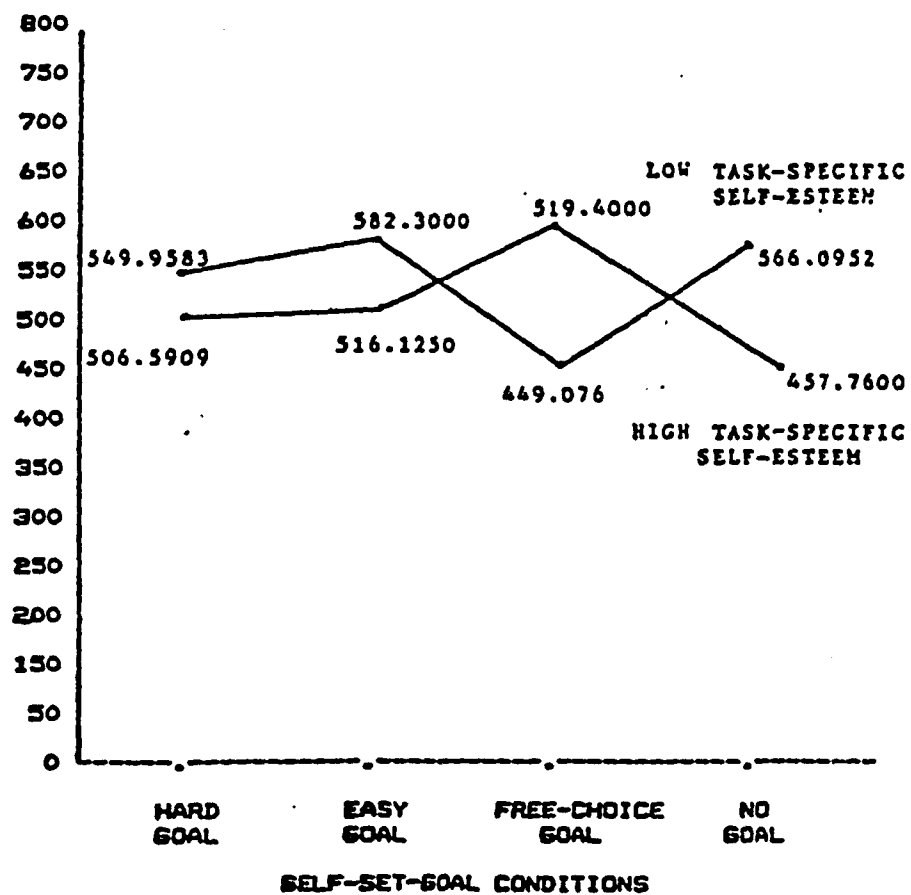


Figure 14. The impact of the interaction between self-set-goal conditions and task-specific self-esteem on perceived total valences of job performance

Table 52

The Correlations Between Perceived Total Valences of Job Performance (PTVJP) and the Dependent Variables for High and for Low Self-Esteem Subjects

Dependent Variables	High Self-Esteem	Low Self-Esteem
Magnitude of	*	
Personal Goal (MPG)	.2141	.1355
Productivity	.2197a **	-.0449
Goal Commitment	.2538 *	.4902***
Goal Attainment	-.1612	-.3122**

Overall Satisfaction	.4359a	.1880
	***	*
Satisfaction With Work	.4642	.2063
	*	
Strength of Self-Efficacy	.1896	.0427
Percentage of Personal	**	**
Goal (PPG)	.3046	.325

*p<.05 **p<.01 ***p<.001		
a Significantly higher (p<.05) than equivalent correlations for low self-esteem subjects. Tested by difference in Fisher's zs.		

of job performance, methods of payment are found to moderate the relationship between perceived total valences of job performance and both productivity and percentage of personal goal. Under the application of hourly payments, those relationships are found to be significantly positive, while under the application of piece-rate payments, those relationships are found to be nonsignificant. In addition, these correlations are significantly higher under the hourly-rate plans than equivalent correlations under the piece-rate plans. These results are not in the expected direction (see Table 53).

However, while a significant positive relationship between perceived total valences of job performance and goal commitment is found under the piece-rate and hourly-rate plans, this relationship is found to be stronger under the application of the former plans than under the application of the latter, which is in the expected direction.

Table 33

The Correlations Between Perceived Total Valences
of Job Performance (PTVJP) and the Dependent Variables Under
the Piece-Rate and Hourly-Rate Plans

Dependent Variables	Correlations Between PTVJP and the Dependent Variables	
	Hourly-Rate	Piece-Rate
Percentage of Personal Goal (PPG)	*** .4758a	.1721
Productivity	** .2548a	.0068
Goal Commitment	** .2647	*** .4023
Overall Satisfaction	.2212	.4094
Strength of Self-Efficacy	.1937 *	.1212
Magnitude of Personal Goal	.2122 *	.1315

*p<.05	**p<.01	***p<.001

a significantly higher ($p<.05$) than equivalent correlation for
low self-esteem subjects. Tested by difference in Fisher's z
(Guilford, 1965).

CHAPTER 6

DISCUSSION

This research was designed to investigate the factors and the mechanism by which monetary incentives influence work behavior and attitudes.

More specifically, this research was designed to investigate the impact of the interaction among types of choice of self-set goals, self-esteem, and methods of payment on goal choice, productivity, goal attainment, and satisfaction.

The major thesis of this research was that a better understanding of the effects of monetary incentives on behavior can only be accomplished through examining the interaction between the personality and the situational variables that influence this behavior and through investigating the mechanism by which this interaction takes place.

Consequently, the major hypothesis of this research was that the highest level of goal choice, productivity, goal attainment, and satisfaction should occur for high-self-esteem individuals who are exposed to situations in which hard-self-set goals are emphasized, and in which piece-rate plans are applied.

Concerning the mechanism by which this interaction takes place, the researcher hypothesized that the effects

of level of goal choice, productivity, goal attainment, and satisfaction are functions of: 1. perceived valences of outcomes that are contingent on high performance and 2. perceived expectancy of attaining a high level of performance.

This research, therefore, hypothesized that the highest level of perceived total valences of job performance should occur for high-self-esteem individuals who are exposed to situations in which hard-self-set goals are emphasized and in which piece-rate plans are applied. In addition, a higher level of expectancy--in all self-set-goal conditions--should occur for high-self-esteem individuals than that level for low-self-esteem individuals. Moreover, high-self-esteem individuals should perceive no significant differences in expectancy in different self-set-goal conditions, compared to low-self-esteem individuals.

The results of this research strongly challenged the assumption that situational factors are the prime determinants of behavior under the application of monetary incentives and goal difficulty. Personality characteristics (in conjunction with either self-set-goal conditions and/or methods of payment) were shown to be an important factor in goal choice, goal attainment, and satisfaction as well as perceived expectancy and perceived valences of outcomes contingencies.

In the following few pages the research, results will be discussed and interpreted and potential important implications of the findings for both future research and work organization will be introduced. The discussion will be organized as follows:

A. The impact of the interaction among self-esteem, types of choice of self-set goals, and methods of payment on personal goals, productivity, goal attainment and satisfaction.

B. The mechanism by which the above interaction takes place.

A. The impact of the interaction of self-esteem, types of choice of self-set goals, and methods of payment on personal goals, productivity, goal attainment, and satisfaction

Personal goals

1. Percentage of personal goal (PPG)

The results show that self-esteem interacts significantly with self-set-goal conditions to influence PPG (percent improvement in productivity set above productivity in the practice trial). On the one hand, high-self-esteem subjects set significantly higher PPG under the hard self-set goal manipulation than under either easy-self-set-goal manipulation, or free-choice-self-set-

goal manipulation. This result is consistent with the research arguments concerning the relationship between self-esteem and self-set-goal conditions, holding constant the effect of methods of payment. On the other hand, low-self-esteem subjects--contrary to the research hypothesis--set higher PPG under the free-choice-self-set-goal manipulation than the PPG set under the other-self-set-goal manipulations. In addition, low-self-esteem subjects set higher PPG--under all self-set-goal conditions--than high-self-esteem subjects, especially under the free-choice-self-set-goal condition. Moreover, neither the main nor the interactive effects of methods of payment on PPG were significant.

Several questions are worth noting. First, why do both high and low-self-esteem subjects exhibit different reactions to the self-set-goal conditions concerning PPG? Second, why do low-self-esteem subjects, contrary to the prediction, set higher PPG in all the self-set-goal conditions than the PPG set by high-self-esteem subjects in these conditions? And third, why do methods of payment show no interactive or main effect on PPG ?

To answer the first question, it is worthwhile to indicate that the manipulations of self-set-goal conditions may convey information related to either task compliance, task competency, or both (see Table 54), and accordingly, this information may cause both high and low-self-esteem

subjects to behave differently regarding PPG.

Table 54

Compliance and competency aspects
of self-set goal conditions

	Task compliance	Task Competency
Hard goal condition	High	High
Easy goal condition	High	Low
Free-choice goal condition	Low	Low

According to Table 54, the hard-self-set-goal condition may convey a high level of authority (or high feeling of external control) since subjects were asked to set a very hard goal. At the same time, this condition also might provide a high level of competency since telling subjects to set hard goals and work very hard to achieve those goals involves high expectations and strong beliefs--by the experimenter--that those subjects are capable of meeting those expectations. Phillips and Freedman (1988) point out that:

Striving for a goal can serve an important competency information feedback function. On the other hand, goals clearly can be a mechanism for inducing task participants to perform at some desired level, thereby also having the potential to reduce feelings of personal control (p. 35).

Similarly, in the self-set-easy-goal condition, telling subjects to set an easy goal involves also a high level of authority, and of external control. However, this condition provides a low sense of competency since achieving an easy goal does not require, by definition, a high level of task competency, relative to achieving a difficult goal.

Finally, in the free-choice-self-set-goal condition, telling subjects to choose whatever goal they would like to pursue conveys a very low level of task compliance (since subjects are not structured to set a specific kind of goal, i.e., hard or easy goals) and, at the same time, reveals no, or little, information regarding task competency.

According to cognitive evaluation theory, by Deci (1975), involvement in the task should be high when subjects perceive high personal control over their behavior, or when they derive a high sense of task competency. If, however, the compliance aspect of the goals is highlighted, then they will have a detrimental effect since their presence should lead to external attribution of control, and consequently, to a loss of feeling of self determination (Deci, 1975). Accordingly, the free-choice-self-set-goal condition may have an advantage over the other-self-set-goal conditions because it highlights a sense of personal control and, thereby, increases self-determination and, consequently, enhances

self evaluation.

However, the information that these goal conditions may provide--regarding task compliance and/or task competency--might have different implications for high- and for low-self-esteem subjects concerning PPG. That is, low-self-esteem subjects might set higher PPG under the free-choice-self-set-goal condition than under the other-self-set-goal conditions because the former condition, relative to the latter, acts as an "ego enhancer." The reason that this effect appeared only for low-self-esteem subjects, rather than for high-self-esteem subjects, is that low-self-esteem subjects are more self-conscious and more self-focused than high-self-esteem subjects. Brockner (1979), and Brockner and Hulton (1978) show that low-self-esteem subjects, relative to high-self-esteem subjects, are more likely to focus on the self, rather than to focus on the task.

High-self-esteem subjects, on the other hand, were more responsive to the hard-goal condition than to the other-goal conditions because it provides a high level of task competency relative to other-goal conditions. This level of competency is consistent with high-self-esteem subjects' image about themselves which overcomes the feeling of high external control that hard-goal manipulation may also provide. In addition, high-self-esteem subjects are more likely to focus on the task than

to focus on the self (Brockner, 1979), and to cope with stressful situations (Howell et al., 1987) than low-self-esteem subjects. Therefore, high-self-esteem subjects in the present research were ready to take advantage of the task competency, rather than to be defeated by the task compliance information that hard-goal condition also provides. Phillips and Freedman (1988) point out that:

In a boring task environment [like the one applied in the present research], the presence of goals might create a sense of challenge that would otherwise not be available from the task itself. This challenge, in turn, should make the task more 'interesting.' Thus, participants might focus on the competency aspect of goals (p.37).

Future research should examine the effects of task compliance and task competency on the choice of PPG--under self-set-goal conditions--for high- and for low-self-esteem subjects. In addition, contrasting self-set-goal conditions with those of assigned goals in the above research might also be a great contribution in the area of goal difficulty, especially that the compliance effects of the assigned goals should be more severe than those of self-set goals.

The implications for organizations of this result are that they should choose workers with high self-esteem and to expose them to situations in which hard-self-set goals are emphasized. However, organizations may strengthen the personality of current low-self-esteem employees through organizational policies that are ego enhancing. For

example, organizations should emphasize a participative-- rather than an autocratic--style of decision making.

Argyris (1957) shows that an ego-enhancing atmosphere leads to high self-perceived competency and increases goal-oriented behavior.

The second question can be answered by indicating that low-self-esteem subjects set higher PPG under all goal conditions than high-self-esteem subjects because they are poor estimators of their potential relative to high-self-esteem subjects. According to Lawler (1973), low-self-esteem subjects are poor estimators of their ability and, accordingly, they have unrealistic expectancy (effort-performance probability). As a consequence, low-self-esteem subjects are more likely to set unrealistic goals than high-self-esteem subjects.

This claim is supported by the following: while, for both high- and low-self-esteem subjects, there was a significant positive relationship between PPG and perceived expectancy, PPG chosen by high-self-esteem subjects was found to be significantly positively associated with productivity, goal commitment, and satisfaction with work, while for low-self-esteem subjects, these relationships are not significant. This result is consistent with Korman's (1970) argument that there should be a positive relationship between goals and performance only for high-self-esteem subjects. This suggests that high-self-esteem

subjects set realistic goals, as compared to low-self-esteem subjects, because goals set by the former have been found to be positively significantly associated with goal commitment and productivity than those goals set by the latter. Future research should test the relationship between perceived realistic expectancy of task success and self-esteem with a longitudinal study under which both high- and low-self-esteem subjects' expectancy, goals, and productivity are measured over several points in time. If expectancy estimate is consistent over time, and correlates significantly positively with both goals and productivity, then it can be concluded that perceived expectancy is a realistic one.

In addition, the fact that low-self-esteem subjects set significantly higher PPG than high-self-esteem subjects under the free-choice-self-set-goal condition (self-esteem effects) may also be explained by the concept of ego enhancement. That is, because low-self-esteem subjects are more anxious and self-focused than high-self-esteem subjects, the complete freedom in goal choices--exercised under the free-choice-goal condition--has, temporarily, enhanced low-self-esteem subjects' image about themselves. Consequently, this enhancement has caused low-self-esteem subjects to set significantly higher PPG--under this condition--than high-self-esteem subjects. Another explanation (which should be coupled with the above one)

might be related to the fact that the free-choice-self-set-goal condition provides little information regarding task competency and, therefore, this information might be more appreciated by low-self-esteem subjects than by high-self-esteem subjects. This is because this information of low task competency is more consistent with the image of the former subjects than the image of the latter.

Consequently, this information may remove the tension, and cause low-self-esteem subjects to set higher PPG than high-self-esteem subjects under the free-choice-self-set-goal condition. Future research should examine the above possible explanations in order to determine why low-self-esteem subjects set higher PPG than high-self-esteem subjects in all self-set-goal conditions, in general, and in the free-choice-self-set-goal condition, in specific.

This research has overcome previous research shortcomings regarding the relationship between self-esteem and goal setting. That is, the design of this experiment as a self-set goal, rather than an assigned goal, approximates and highlights the impact of individual differences by allowing subjects to have greater control over the choice of their goal level. In addition, measurements of personality were handled before the manipulation of the experimental variables, rather than after, which overcomes some of the previous research shortcomings. Yet, this research has shown that self-

esteem is an important variable in goal choice, which is consistent with Locke et al. (1981) who argue that one's goal level should be a reflection of one's self-esteem.

The third question may be answered by indicating that methods of payment show no main or interactive effect on PPG because of the following:

First, methods of payment may not be a factor in goal choice, although, in theory, they should be (see Locke, 1968). Terborg (1976), and Terborg and Miller (1978) show that monetary incentives have no impact on whether or not subjects set performance goals. Locke et al. (1968), however, found that piece-rate plans caused subjects to set higher goals than hourly-flat-rate plans. Unfortunately, this finding could not be replicated (see Chung & Vickery, 1976; Latham, Mitchell, & Dossett, 1978; London & Oldham, 1976; Pritchard & Curtis, 1973; Terborg, 1976; Terborg & Miller, 1978).

Terborg (1976) has suggested that money may influence subjects' goal commitment, rather than influence subjects' willingness to set hard goals. Testing this hypothesis, however, yielded inconsistent results. Part of the failure to test this hypothesis may lie in an insufficient amount of incentives, poor experimental design, or inadequate measurements of goal commitment (Riedel et al., 1988). In the present research, while most of these problems are resolved, including the measurements of goal commitment,

methods of payment show no main or interactive effect on goal commitment. In other words, providing a subject incentives doesn't cause him/her to set higher goals than providing no incentives. Goal commitment will be discussed, at length, later in this section.

Second, it is possible that methods of payment work as a factor in goal choice only at a higher level of the goals being set, rather than at a lower level. For example, the effect of methods of payment--as a factor in goal choice--may appear only among those subjects who set PPG higher than 50%--rather than among those who set PPG lower than 50%--improvements in their productivity above their productivity in the practice trial. The explanation for that is derived from Locke et al. (1988) who argue that commitment to difficult goals and to easy goals is not the same conceptual construct. Accordingly, factors influencing commitment to difficult or to easy goals may not be the same. Future research should examine those factors that influence subjects' choice of different levels of PPG.

Holding personality characteristics constant, the result of this research indicated that methods of payment show a significant main effect on magnitude of personal goal (MPG--how difficult is the chosen goal), while they show no effect on PPG (how much is the chosen goal in terms of the percentage improvement in productivity). Analysis

of variance indicated that subjects set goals of significantly higher magnitude under piece-rate plans than under hourly-flat-rate plans. Riedel et al. (1988) found similar results. They also found that monetary incentives caused people to set difficult goals, but not necessarily specific goals (i.e., similar to PPG).

This finding, while interesting, is difficult to explain. One explanation might be that: PPG relative to MPG is ambiguous regarding "the degree of difficulty." That is, PPG is not necessarily judged by subjects as easy or difficult according to its level. For example, a PPG of 10% might be difficult to one person and easy to another. Accordingly, methods of payment may cease to be a factor in the choice of PPG.

The situation, however, is different for MPG. That is, if a person has reported that the chosen goal is a difficult one, then this goal is perceived by him/her to be difficult. Therefore, this clarity in goal difficulty may cause methods of payment to be important in the choice of MPG. For example, under the piece-rate system, subjects chose more difficult goals than the goals chosen under the hourly-rate system. Accordingly, incentives may help subjects carry out the burden of a difficult goal. Future research should be directed toward examining the potential differences between goal specificity (PPG) and goal difficulty (MPG) on perception of pay importance.

2. Magnitude of personal goal (MPG)

MPG (how difficult the chosen goal is perceived by a subject) shows different results than PPG. The result showed that methods of payment interacted significantly with task-specific self-esteem (TSSE)--while need for money (NM) interacted significantly with self-set-goal conditions--to influence MPG.

Concerning the first interaction, high-TSSE subjects set goals of significantly higher magnitude under the piece-rate plans than under hourly-rate plans. Low-TSSE subjects, however, show no relationship to methods of payment.

This result is consistent with Lawler's (1973) extrinsic motivation model. According to Lawler, monetary incentives should have little effect on those who believe that they are incapable of achieving a necessary level of performance.

This result is consistent also with Korman's (1970) self-consistency theory which indicates that high- and low-task-specific-self-esteem subjects should behave in a manner consistent with their self-image. That is, individuals seek the level of rewards that is consistent with their self-perceived ability on the task. However, this result is inconsistent with some research (e.g., Hechler & Wiener, 1974; Yukl & Latham, 1978) which

indicates that low-self-esteem subjects are more responsive to the effect of monetary rewards than high-self-esteem subjects. However, these two studies have applied different reward systems than the one applied in the present research. For example, Yukl and Latham (1978) have dealt with a pay increase system rather than a piece-rate plan.

The implication to organizations is that under the application of a contingent-reward system, high-TSSE subjects should be selected and given the necessary training to perform the incentive task effectively.

The question now is why does the three-way interaction show no effect on MPG? In other words, why do self-set-goal conditions show no interaction with TSSE and methods of payment in influencing MPG?

The explanation for that is that low-TSSE subjects showed no response to methods of payment; therefore, they are also unlikely to show any response to self-set-goal conditions since research (i.e., Hechler & Wiener, 1974; Yukl & Latham, 1978) showed that low-self-esteem subjects will not try hard in the absence of monetary rewards.

For high-TSSE subjects, however, the fact that they showed a response to methods of payment makes it difficult to explain why they aren't also responsive to the hard-self-set-goal condition since it provides them with the highest expected rewards.

The explanation for that might be related to the following: under piece-rate plans, subjects were told that they were going to be paid a specific amount of money for each answer correctly coded. Accordingly, hard-goal manipulation may cause high-TSSE subjects to expect severe task pressures to do both high quantity and high quality work (since quantity and quality are inversely related under the experimental task). As a consequence, a higher number of items coded may very well also result in a higher number of mistakes--and a lesser amount of money being earned--which is very undesirable. Because high-self-esteem subjects have general predisposition to behave effectively (both in terms of output quantity and quality (see Hechler & Wiener, 1974; Korman, 1970), it is also possible that high-TSSE subjects have the same tendency and accordingly they found themselves better off not to respond to the hard-goal (and/or to the other-goal manipulations).

It is important to indicate that TSSE in this research was not found to be related to chronic self-esteem (and this may explain why TSSE and chronic self-esteem show different relationships with the research variables regarding personal goal). One explanation for that is that the TSSE scale shows a low reliability in the present research, and accordingly, if the measure is not reliable, then it is unlikely to be valid by showing a relationship to another related construct. Another explanation might

be that TSSE is measuring a different factor than chronic self-esteem, although Korman (1976, 1970) claims that TSSE is one dimension of self-esteem. That is, TSSE is measuring the task-specific aspect of self-esteem which is temporarily and situationally determined, while chronic self-esteem is measuring the trait aspect of self-esteem which is stable and generalized across situations. Future research should be directed toward clarifying how TSSE is related to chronic self-esteem by developing a valid and reliable measurement of TSSE.

Concerning the second interaction, high-NM subjects set significantly higher MPG under both the hard-self-set-goal manipulation and free-choice-self-set-goal manipulation than under the easy-self-set-goal manipulation. Similarly, low-NM subjects set higher MPG under the hard-self-set-goal manipulation than under the easy-self-set-goal manipulation. In addition, high-NM subjects set significantly higher MPG under the free-choice-self-set-goal manipulation than those MPG set by low-NM subjects (NM effects). The fact that methods of payment show no interaction with NM and self-set-goal conditions in influencing MPG is difficult to explain, especially for high-NM subjects. However, as explained before in this section, piece-rate plans, especially where setting a hard goal is emphasized, provide the highest expected gain and the highest expected loss. Because

high-NM subjects are concerned with obtaining the money, the fear of the possibility of losing it may cause them not to set higher MPG under the piece-rate plans, as compared to the hourly-rate plans. This, therefore, might result in no significant differences in MPG between the piece-rate and hourly-rate plans for high-NM subjects.

This finding suggests that NM (in conjunction with self-set-goal conditions) is an important factor in the choice of goal difficulty level. While both high- and low-NM subjects show a significant response to self-set-goal conditions, high-NM subjects show a stronger response (both in terms of conditions effect and NM effect) than low-need-for-money subjects.

While both PPG and MPG show a significant positive correlation with overall satisfaction and goal commitment, PPG is found to be positively and significantly correlated with productivity, while MPG is not. This result suggests that PPG is more important than MPG because PPG can also influence productivity in addition to satisfaction and commitment. While all these dependent variables are important, productivity should be of more concern to organizations than satisfaction and commitment, because it is the primary reason for organizational existence.

It is not clear, however, why PPG tends to correlate significantly with productivity, while MPG does not since, according to Locke (1968), both "goal specificity" and "

goal difficulty" should be positively related to productivity. One explanation might be that the clarity, specificity, and the quantitative aspects that characterize PPG relative to MPG make it easier for subjects to connect PPG, rather than MPG, to productivity. Future research should examine the relative importance of PPG vs MPG, using different indicators of productivity, satisfaction, and commitment.

Productivity

The results of this research concerning productivity show a significant two-way interaction between self-set-goal conditions and methods of payment. Under the application of piece-rate plans, productivity under each self-set-goal condition (i.e., hard-goal, easy-goal, or free-choice-goal conditions) was significantly higher than productivity under the no-goal condition. This result provides support for the effect of goal setting, rather than goal difficulty. Under the application of hourly-rate plans, however, productivity under the hard-goal condition was significantly higher than productivity under the easy-goal, free-choice-goal, or no-goal conditions. This result provides support for the effect of goal difficulty, rather than goal setting.

The results of this research indicated also that productivity means (see Table 26) were significantly higher

in all goal conditions under the piece-rate plans than under the hourly plans, except in the hard-goal condition and the no-goal condition.

The question is, why at both the hard-goal and no-goal conditions did the effects of piece-rate plans as a motivational force disappear, relative to the effects of hourly-rate plans?

As explained before, the hard-goal-piece-rate condition may provide subjects with the highest expected outcomes, and the highest expected loss, relative to the hourly-rate plans, since, under the former, subjects were informed that they were going to be paid a specific amount of money for each answer correctly coded, whereas, under the latter, they were told that they were going to be paid \$4 for their participation in correctly coding answers from questionnaires to IBM computer sheets. Since hard-goal manipulation requires subjects to work very hard to maximize the number of answers coded, and since quantity and quality are inversely related, then coding more answers may have been perceived to result in more mistakes, and consequently, less money being earned. Therefore, fear of losing the money under the hard-goal-piece-rate condition may cause subjects not to try very hard which results in number of units produced almost similar to those under hard-goal-hourly-rate condition.

Campbell (1984) has reviewed this problem. He argues

that people in non-contingent rewards may produce higher units than people in contingent rewards. In the non-contingent rewards, the financial incentive is certain to be received which provides an additional positive outcome (security) which is unlikely to be received when pay is tied to performance.

The implication for organizations is that paying contingent rewards--in conjunction with the application of hard-self-set goals--may not necessarily lead to higher productivity than non-contingent rewards if people enjoy the security that the latter system provides relative to the former. Accordingly, a contingent reward system should be carefully designed in such a way as to reward those subjects without hurting their security, especially in those situations in which subjects are asked also to set goals of higher magnitudes. One way to do that is to provide a subject with a clear task which is completely under his/her control. One problem reported by subjects with the experimental task of the present study was subjects' inability to have a full control over the mistakes they encounter during their work in the task, which made the hourly system superior over the piece-rate system. Another way to reduce the insecurity of piece-rate plans is to pay a reasonable amount of money (i.e., which is not very high or very low). When the incentive rate is so high, subjects may become anxious and start worrying

about the risk of losing the money, rather than concentrating on the payoff of working hard under it. When the incentive rate is very low, then the effect of incentives as a motivator will disappear. The fact that this research--in an attempt to solve the low incentive rate provided by previous research--had offered subjects a high piece-rate may also very well work in the opposite direction (i.e., increasing the fear of the possibility of losing the money), given the problem of the experimental task explained above.

Accordingly, piece-rate systems, when carefully designed, may greatly enhance performance. Mowen, Middlemist, and Luther (1981) found that under the piece rate system, subjects given difficult goals performed significantly ($p < .01$) higher than subjects given easy goals. This is because the piece-rate system reduces the level of frustration that is usually triggered when there is a difficult goal to reach, as each unit produced is rewarded. Future research should test the possibility of whether "insecurity" is an inherent characteristic of the piece-rate systems themselves or it is a function of situational factors such as the task, the incentive rate, or both. This could be done by testing the impact of piece-rate systems on subjects' feeling of insecurity and productivity under different tasks, and where different incentive rates are offered.

The fact that there was no significant difference in productivity between the no-goal-piece-rate condition and the no-goal-hourly-flat-rate condition suggests that incentives cease to be a motivational force when goal is controlled. This finding is consistent with Locke et al.'s (1968) research, but it is contradictory to the large number of studies which show that methods of payment have an independent influence on productivity (e.g., Chung & Vickery, 1976; Latham, Mitchell, & Dossett, 1978; London & Oldham, 1976; Pritchard & Curtis, 1973; Terborg, 1976; Terborg & Miller, 1978). These studies did not find an interaction between methods of payment and goal difficulty in influencing productivity; that is, methods of payment and goal difficulty independently influence productivity.

However, the difference between the finding of the present study and the result of previous research may be due to:

First, differences in the experimental design used: Previous studies focused mainly on assigned goal situation, whereas the present research deals with a self-set-goal situation in which both goal setting and goal difficulty are manipulated experimentally. Focusing on self-set goals, as opposed to assigned goals may have contributed to increasing subjects' involvement in the task and commitment to the goal. This is because, under the self-set-goal situations, subjects may derive greater sense of personal

control than under the assigned goal situations. According to Deci (1975), task interest is a function of personal attribution of control. Therefore, It is possible that under assigned goal situation subjects may not fully accept the goal, and consequently, task interest is reduced. Unfortunately, measure of goal acceptance was not available in most of these studies, and a few studies measured goal acceptance inadequately. If subjects do not fully accept the goal assigned to them in those experiments, then the possibility of the interaction between goal and methods of payment is limited. The present study showed that there was a positive significant correlation between either PPG, or MPG, and goal commitment.

In addition, previous experiments were designed to test different hypotheses than the present research hypotheses. They were designed to retest Locke et al.'s (1968) finding that goal mediates the effect of incentives on behavior, which required a different research design than the one applied in the present research.

Second, differences in productivity measurement being used: The present research has eliminated variance of ability from the productivity measurement to reflect the unique effect of motivation without the effect of ability (see pages 94-95). Most of previous research does not control for ability, and accordingly, data are contaminated

by the unexplained variance of it.

Third, differences in the amount of money offered: Under the present study, subjects were paid a sufficient amount of money for working 20 minutes in the coding task. Under the hourly-rate plans, they were given \$4 for their participation, whereas under the piece-rate plans, subjects were given the opportunity to earn as much money as they could. Many subjects earned as much as \$9 in the experimental trial, in addition to \$4 earned in the practice trial which was paid to all subjects, regardless of the experimental condition they worked under.

The present research has shown that under the application of hourly plans, types of choice of self-set goals affected productivity. Subjects who were exposed to the hard-self-set-goal manipulation coded a significantly higher number of answers than subjects exposed to either easy, free-choice, or no self-set-goal manipulations. This result may have a significant contribution regarding the relative effectiveness of self-set goals and assigned goals in influencing productivity, given the fact that self-set goals relative to assigned goals have not been adequately studied.

To clarify, research (see Locke et al., 1968) shows that assigned goals lead to higher productivity than self-set goals because people under the latter set themselves relatively easy goals. The researcher argues that there

was a methodological problem in testing the relative effectiveness of self-set goals vs assigned goals. That is, assigned goals were experimentally manipulated by assigning subjects hard goals in which subjects explicitly, or implicitly, understood that they had to try very hard for those goals, while under self-set goals, subjects were only asked to set goals for themselves. Accordingly, the manipulation of assigned goals involved both goal setting and goal difficulty (since subjects were assigned difficult goals), while the manipulation of self-set goals involved only goal setting without goal difficulty (since subjects were asked only to set goals). Thus, the superiority of assigned goals over self-set goals in increasing productivity might have resulted from the fact that goal difficulty was manipulated under the former situation but not under the latter. Therefore, to adequately test the relative effectiveness of self-set goals vs assigned goals, goal difficulty should also be manipulated under the self-set goals. To accomplish this, a researcher should tell subjects, in self-set-goal situations, to set "difficult" goals for themselves. Then, and only then, can the relative effectiveness of self-set goals vs assigned goals be addressed. While the present research was not intended to test the relative effectiveness of assigned goals vs self-set goals, the present research was designed to test the possibility of

enhancing self-set goals by manipulating both goal setting and goal difficulty. Based on the finding of the present research regarding the effects of self-set-goal conditions on productivity, it is suggested that the claim that self-set goals are not effective in increasing productivity compared to assigned goals may need to be re-examined where self-set goals are adequately studied. Future research is needed to clarify the relative contribution of assigned goals relative to self-set goals (where both goal setting and goal difficulty are manipulated) to increasing productivity. Under this situation, the researcher expects that self-set goals should be superior to assigned goals in increasing performance because, everything being equal, self-set goals involve a greater sense of personal control (see Austin, 1989), and of goal commitment (Hollenbeck & Klein, 1987) than assigned goals. According to Locke et al. (1988), everything being equal, the higher the goal commitment, the higher the performance.

Self-esteem shows neither a main, nor an interactive, effect on productivity. But the question is why didn't self-esteem affect productivity while it did affect PPG?

The answer may be that choices were not allowed in productivity, as they were allowed in personal goals. That is, the design of the experiment allowed subjects to choose their goal level (i.e., subjects were allowed to choose their own goal), while productivity's measure was

calculated based on actual performance. For example, subjects were not asked to select from a wide scale, before working on the experimental task, the level (e.g., high, moderate, low) of productivity they would like to obtain. The effects of personality may be maximized in situations that allow the choice of productivity level, rather than in situations where productivity is based on actual performance level. The reason for this is that choices are a pure reflection of the individual differences, while productivity is not because it may be influenced by situational variables which are beyond individuals' control. For example, the lack of self-esteem's effect on productivity could be explained by indicating that the task was so easy that the effect of self-esteem diminished. Korman (1970) found that, with easy task, there were no differences in goal attainment as a function of self-esteem, whereas with difficult task there was a difference.

While this research shows no interactive or main effect of self-esteem on productivity, the correlation between PPG and productivity for high-self-esteem subjects was found to be significantly positive, while for low-self-esteem subjects, this correlation was not significant. In addition, this correlation for high-self-esteem subjects was found to be significantly higher than equivalent correlation for low-self-esteem subjects. This result is

consistent with Carroll and Tosi's (1970) research which showed that individuals with high self-assurance increased effort in the face of difficult goals, whereas those with low self-assurance reduced effort as the goals became harder. This result also is consistent with Korman's (1970) self-consistency theory which indicated that both high- and low-self-esteem subjects behave in such a manner consistent with their self- image. However, the present research finding, concerning self-esteem, is inconsistent with Latham and Yukl's (1978) research which showed that self-esteem does not moderate the effects of participative and assigned goal on job performance. The differences between the results obtained by Latham and Yukl (1978) and the result of the present study may be explained by indicating that they have applied participative and assigned goals, while the present study has applied self-set goals.

Goal commitment

A very related and important issue to productivity is goal commitment. The effectiveness of goal setting requires the existence of goal commitment (Latham & Yukl, 1975 ; Locke, 1968). While goal commitment is not a part of the research hypotheses, Hollenbeck and Klein (1987) recommended that goal commitment should be measured in all future goal setting studies even when goal commitment does

not have a central role in the hypotheses tested.

The present research shows that neither the main, nor the interactive, effect of both methods of payment and goal conditions on goal commitment are significant.

Regarding the relationship between methods of payment and commitment, the result is not consistent with Locke's (1968) argument which indicates that money should increase subjects' commitment to the goal. Commitment under piece-rate plans was not significantly higher than commitment under hourly plans. In addition, there were no significant differences in goal commitment among goal conditions.

This research did find, however, that the relationship between either PPG or MPG and goal commitment is significantly positive; that is, the higher the level of the goal being set, or the more difficult the goal is chosen, the higher the commitment to the goal. The latter finding is not consistent with previous research which showed that, as goal difficulty increased, commitment to the goal decreases (Huber & Neale, 1986; Mento et al., 1980). However, this difference in results between the present and previous research may be related to the kind of goal being studied. Previous research focused on assigned goals, while the present research focuses on self-set goals. It is possible, therefore, that under self-set goal situations, as the goal becomes harder, subjects commitment to the goal increases because the goals

being set are their own, while under assigned goal situations, the opposite is true. Research shows that as participation in goal setting increases, subjects' commitment to the goal increases (Erez & Arad, 1986; Latham & Yukl, 1975).

As explained, while commitment is positively significantly related to PPG and MPG, it is not related to productivity. Locke et al. (1988) point out that researchers have had difficulty demonstrating the effects of goal commitment on performance (Ivancevich & McMahan, 1982; Locke et al., 1984; London & Oldham, 1976; Mento et al., 1980; Pritchard & Curtis, 1973, Latham & Yukl, 1978).

However, in the present research, the relationship between goal commitment and productivity is significantly positive only for high-self-esteem subjects. In addition, this correlation for high self-esteem subjects is significantly higher than equivalent correlation for low-self-esteem subjects. This suggests that self-esteem moderates the relationship between goal commitment and productivity. This result may explain why previous research has failed to demonstrate the significant positive relationship between goal commitment and productivity.

Future research should retest this finding under different goal situations, such as assigned and self-set goals. Such research is expected to be important since it

will add more variance to the commitment measure by introducing different contrasting conditions of goals. Locke et al. (1988) point out that the reason for a lack of a significant relationship between goal commitment and productivity is the fact that there was not much variance in goal commitment measure, i.e., goal commitment was easily achieved in those studies that attempted to measure goal commitment. This suggested research will also be important since, while some research has found that goal commitment increased more in participative goal situations than in assigned goal situations (e.g., Erez & Arad, 1986); it is noted that Dossett et al. (1979) found the opposite relationship. Further research, therefore, is needed to clarify these issues.

The present research shows that goal commitment is positively significantly related to expectancy and perceived total valences of job performance (see the intercorrelation matrix in Appendix B). This result is consistent with Hollenbeck and Klein's (1987), and Locke et al.'s (1988) research which suggests that goal commitment should be affected by perceived expectancy and perceived attractiveness of goal attainment. Goal commitment is found to be related to perceived instrumentality (that high performance leads to high rewards) and to valences of several outcomes (i.e., a composite measure of valences of money, pride, entertainment and low boredom). This result

is consistent with Yukl and Latham's (1978) research which shows that instrumentality is positively related to goal commitment, and Mento et al.'s (1980) finding that goal valences are positively related to goal commitment. This suggests that variance in goal commitment could be explained by the expectancy theory variables.

Goal attainment

Goal attainment measures how well an individual attains his/her goal, while productivity measures how hard an individual has tried, regardless of goal attainment. This research hypothesized that goal attainment will be the highest for high-self-esteem subjects who are exposed to situations in which hard-self-set goals are emphasized and in which monetary incentives are applied.

This hypothesis was not supported. Instead, a significant three-way interaction was found among methods of payment, self-set-goal conditions, and need for money (NM) in influencing goal attainment.

High-NM subjects showed significant variations in goal attainment that are due only to piece-rate plans, but not to hourly-rate plans, while Low-NM subjects showed significant variations in goal attainment that are due to hourly-rate plans.

Under piece-rate plans, high-need-for-money subjects attained their goals and produced beyond them in the easy-

goal condition as compared to either the hard- or free-choice-self-set-goal conditions. Under hourly-rate plans, however, there were no significant differences in goal attainment among self-set-goal conditions.

For low-NM subjects, under hourly-rate plans, goal attainment in the easy- and free-choice-goal conditions were significantly better than goal attainment in the hard-goal condition. It is important to indicate also that low-NM subjects, under piece-rate plans, attained their goals considerably better under both the hard-goal and free-choice goal conditions than under the easy-goal condition.

However, because of the unequal variance among the experimental conditions, the Scheffe test shows no significant differences in goal attainment among these conditions.

This shows that, while low-NM-subjects did not need the money, they strove to maximize their gains under both piece-rate plans and hourly-flat-rate plans. Under piece-rate plans, they attained their goals considerably better under both the hard- and free-choice-goal conditions than under the easy-goal condition because of the effect of incentives. Under hourly plans, however, they attained their goal better under both the easy- and free-choice-goal conditions than under the hard-goal condition because the perceived ratio of inputs-outcomes is higher under the former conditions than under the latter, even though the

amount of money received is equal in all conditions.

The question now is why high-NM subjects did not attain their goals under the hard-goal-piece-rate condition since it provides the highest outcomes relative to the other-goal conditions. The explanation is that, since high-NM subjects need the money very much, they were more careful than low-NM subjects not to lose it. As explained, the hard-goal-piece-rate condition provides the highest expected outcomes and the highest expected loss. So high-NM subjects find that they are better off working slowly than working fast under this condition. However, because low-NM subjects do not need the money (and consequently, do not fear losing it, compared to high-NM subjects), they have tried harder to attain their goals under the hard- and free-choice-goal conditions than under the easy-goal condition. But the question is, why were low-need-for-money subjects trying very hard to maximize their gain, under both the piece-rate- and hourly-rate plans, if they do not need the money? The answer to this is that Low-NM subjects were not interested in the money itself, but in the other values that money might lead to, such as pride. Future research should replicate this research with a reliable measurement of need for money and with an application of an incentive system that provides both rewards and security, as previously explained in an earlier section.

Locke (1986) argues that money causes subjects to increase their effort in the face of challenging goals, i.e., under monetary incentive plans greater goal attainment should be obtained than under hourly plans. The main effect of methods of payment indicates that the piece-rate condition shows a considerable amount of goal attainment (mean = 16.1175) as compared to that amount (mean = 4.8571) in the hourly-rate condition. However, analysis of variance shows that there is no significant difference in goal attainment due to methods of payment, which is probably caused by the unequal variance between piece- and hourly-rate groups. However, this result should be taken with caution since the interaction among methods of payment, self-set-goal conditions, and NM is significant, as it is explained before.

The frequency distribution, however, shows that 84 subjects out of 138 (about 61%) attained their goals and produced beyond them. Future research should be directed toward contrasting self-set goals with assigned goals to test the relative contribution of each situation in explaining the variance in goal attainment. Such research would be important since while it is logical that goal attainment should be higher under self-set-goal situations than under assigned-goal situations (because people will set the goals that fit their own ability and their expectancy of reaching them) (see Austin, 1989); it is

noted that Dossett et al. (1979) found that goal attainment was higher in the assigned goals than in the participatively-set goals. These puzzling results need additional research.

Under the hard-goal condition, 24 subjects, out of 46 (about 52%), attained their goals. Under the easy-goal condition, 32 subjects, out of 46 (about 69%), attained their goals, while under the free-choice-goal condition, 28 subjects, out of 46 (about 61%), attained their goals and produced beyond them. This shows that, as goal increases in difficulty, the number of people who attain their goal decreases. Jackson and Zedeck (1982) have reached a similar conclusion. This result is inconsistent with the research arguments regarding the motivational implication of self-set goals, which indicates that the harder the goal, the higher the goal attainment.

44 subjects, out of 69 (about 64%), and 40 subjects, out of 69 (about 58%), attained their goals and produced beyond them under piece-rate plans and under hourly-flat-rate plans, respectively. This shows that higher numbers of subjects attained their goals under piece-rate plans than under hourly plans, although this difference is not considerable. This suggests that piece-rate plans encourage more subjects to attain their goals than hourly plans. This is consistent with Locke's (1968) argument that money increases persistence in the face of a

difficult goal and reduces the frustration that is involved in goal attainment.

Satisfaction

This research hypothesized that satisfaction will be the highest for high-self-esteem individuals who are exposed to a situation in which hard self-set goals are emphasized, and in which piece-rate plans are applied.

The result of this research shows that there is a significant three-way interaction between methods of payment, self-set-goal conditions and task-specific self-esteem (TSSE) in influencing overall satisfaction (a composite measure of satisfaction with the work, pay, methods of payment, and overall job), in general, and satisfaction with work, in specific.

With regard to the overall satisfaction, for high-TSSE subjects, the result partially supports the hypothesis. The highest level of overall satisfaction was obtained under the hard-goal-piece-rate condition, although the Scheffe test shows that there were no significant differences in overall satisfaction. For low-TSSE subjects, however, while the three-way interaction is significant, the result was not in the expected direction. The highest satisfaction was obtained under the easy-goal-piece-rate condition, although the Scheffe test shows that there were no significant differences among the

experimental conditions.

This result seems to be consistent with Korman's (1976) argument which indicates that high- and low-TSSE subjects will be satisfied in situations that maximize their self-image. High- TSSE subjects were more satisfied under the hard-goal-piece-rate condition than under the other-goal conditions because they appreciate the challenge that hard-goal condition provides especially when these challenging goals are also rewarding. Low-TSSE subjects, however, were more satisfied under the easy-goal-piece-rate condition than under the other-goal conditions because the former condition removes the tension and brings an image consistent with low-TSSE subjects' perception about their task- competency.

With regard to satisfaction with work, examining the simple effect (the interaction between methods of payment and self-set-goal conditions for high- and for low-TSSE subjects) showed that there was no "conditions effect" for either high- or low-TSSE subjects. However, there was a significant "TSSE effect" at both easy-goal-piece-rate condition and easy-goal-hourly-rate condition. Low-TSSE subjects were more satisfied with the work at the easy-goal-piece-rate condition than high-TSSE subjects, while high-TSSE subjects were more satisfied with the work than low-TSSE subjects at the easy-goal-hourly-rate condition.

Research (e.g., Bandura & Cervone, 1986; Locke et al.,

1970; London & Oldham, 1976) shows that satisfaction is a function of goal-performance discrepancy. The higher the discrepancy between goal and performance in the positive direction, the higher the satisfaction.

Therefore, the above significant "TSSE effect" may be explained by examining the discrepancy in goal attainment between high- and low-TSSE subjects at both the easy-goal-piece-rate condition and the easy-goal-hourly-rate condition.

Table 55 (in Appendix C) shows that low-TSSE subjects, under the easy-goal-piece-rate condition, considerably, attained their goals and produced beyond them relative to high-TSSE subjects. This might explain why low-TSSE subjects were more satisfied under the easy-goal-piece-rate condition than high- TSSE subjects.

In addition, Table 55 (in Appendix C) also shows that high- TSSE subjects, under the easy-goal-hourly-rate condition, considerably attained their goals and produced beyond them as compared to the low-TSSE subjects. This might explain why high- TSSE subjects were more satisfied under the easy-goal-hourly-rate condition than low-TSSE subjects.

This result could also be explained by examining the differences between high- and low-TSSE subjects in "perceived total valences of job performance" (PTVJP). According to Porter and Lawler's (1968) satisfaction model,

the higher the extrinsic and intrinsic rewards that are contingent on high performance, the higher the perceived satisfaction.

Table 56 (in Appendix C) shows that "perceived total valences of job performance" can also account for explaining these differences in perceived satisfaction between high- and low-TSSE subjects. Low-TSSE subjects under the easy-goal-piece-rate condition have a higher amount of PTVJP than high-TSSE subjects. However, under the easy-goal-hourly-rate condition, high-TSSE subjects have higher PTVJP than low-TSSE subjects.

It might be true that goal attainment influenced PTVJP which, in turn, influenced satisfaction. Under the easy-goal-piece-rate condition, low-TSSE subjects have higher goal attainment, and consequently, have higher PTVJP which, in turn, leads to higher satisfaction than that obtained by high-TSSE subjects. Under the easy-goal-hourly-rate condition, high-TSSE subjects have higher goal attainment, and consequently, have higher PTVJP which, in turn, leads to higher satisfaction than that obtained by low-TSSE subjects. This is consistent with Porter and Lawler's (1968) satisfaction model which indicates that high productivity leads to high rewards which in turn lead to high satisfaction.

The question now is why did not high-TSSE subjects attain their goal under the easy-goal-piece-rate condition,

while they did attain their goals under the easy-goal-hourly-rate condition?

One explanation might be that high-TSSE subjects might be more concerned with doing high work quality than low-TSSE subjects. Accordingly, high-TSSE subjects will be more penalized under piece-rate plans than under hourly-flat-rate plans. That is, since quality and quantity are inversely related, higher work quality will result in receiving lower pay under the former plans than under the latter. Accordingly, high-TSSE subjects were more anxious than low-TSSE subjects. This resulted in better goal attainment (and consequently higher satisfaction) for low-TSSE subjects than for high-TSSE subjects, under the application of easy-goal-piece-rate condition.

Unfortunately, measure of work quality could not be obtained. Future research should examine the effect of TSSE, methods of payment, and self-set-goal conditions on satisfaction using a measure of goal attainment that reflects both quantity and quality of productivity.

Porter and Lawler (1968) argue that the relationship between productivity and satisfaction is mediated by perceived extrinsic and intrinsic rewards. Examining the correlation between productivity and overall satisfaction under the application of piece-rate plans and hourly-flat-rate plans reveals that: Under the application of piece-rate plans, the relationship between productivity and

either overall satisfaction, or satisfaction with work, is not significant. However, the correlation is significantly positive between productivity and the following variables: satisfaction with pay, satisfaction with methods of payment, and satisfaction with the overall job.

Under the application of hourly-flat-rate plans, however, the relationship between productivity and any measure of satisfaction is not significant. This shows that the relationship between productivity and satisfaction is significant because of extrinsic rewards. When extrinsic rewards were controlled, productivity was not significantly related to satisfaction. Accordingly, Porter and Lawler's (1968) model is supported only with respect to the following: satisfaction with pay, satisfaction with methods of payment, and satisfaction with overall job. This result, however, is not consistent with Pritchard's (1973) research which showed that performance-satisfaction correlation under the incentive system was not generally positive and was not larger than the correlation under hourly system. Differences in results between the present research and Pritchard's (1973) research could be related to differences in the research design and measurements applied.

Examining the correlation between productivity and satisfaction under self-set-goal conditions reveals that

this correlation is significantly positive only under the free-choice-goal condition ($r=.3623$, $p<.01$). In addition, this correlation under the free-choice-goal condition is found to be significantly higher than equivalent correlations under both hard-goal condition ($p = .05$) and easy-goal condition ($p < .05$). This is because, as previously explained, the free-choice-goal condition, relative to the other-goal conditions, might provide individuals with a high feeling of internal control since they are allowed complete control over the choice of their goal levels. As previously explained, according to the cognitive evaluation theory (see Deci, 1975), task interest is a function of attribution of personal control. The higher the feeling of internal control, the higher the self-determination and productivity, and consequently, the higher the satisfaction. This result shows that types of choice of self-set-goals moderate the relationship between productivity and satisfaction. This result is consistent with Porter and Lawler 's (1968) satisfaction model. That is, feeling of self-control is enhanced under the free-choice-self-set-goal condition, relative to other goal conditions; therefore, feeling of self-control has served as an additional outcome which enhances intrinsic rewards, and causes the relationship between productivity and satisfaction to be significantly positive only under the free-choice-goal condition as opposed to the other goal

conditions. Future research should examine the reasons behind the superiority of the free-choice-self-set-goal condition, relative to other goal conditions, toward enhancing productivity-satisfaction relationship.

The relationship between productivity and satisfaction was found to be moderated by self-esteem. The correlation between productivity and satisfaction was significantly positive only for high-self-esteem subjects. In addition, this correlation for high-self-esteem subjects was found to be significantly higher than equivalent correlation for low-self-esteem subjects. This result supports Korman's (1976) self-consistency theory. This result is also consistent with Greenhaus and Badin's (1974) finding that performance influences satisfaction only for high-self-esteem individuals. However, this result is not consistent with Tharenou and Harker's (1984) finding that self-esteem does not moderate the relationship between productivity and satisfaction. However, different measurements and research designs among the above research could be responsible for these differences in results regarding the moderating effect of self-esteem on performance-satisfaction relationship.

In addition, the relationship between productivity and satisfaction is found also to be moderated by TSSE. That is, productivity was significantly positively correlated with overall satisfaction only for low-TSSE subjects. In

addition, this correlation for low-TSSE subjects was significantly higher than equivalent correlation for high-TSSE subjects. This result is inconsistent with the arguments of the present study. It may be explained by indicating that low-TSSE subjects, relative to high-TSSE subjects, set lower goals, and therefore, are more satisfied with a lower level of performance than high-TSSE subjects. Future research should reexamine the relationship between productivity and satisfaction using reliable measurements of TSSE.

B. The mechanism of influence

The mechanism by which self-set-goal conditions, methods of payment, and self-esteem influence the dependent variables in this research is expected to be related to the following: 1. perceived expectancy that high effort leads to high performance and 2. perceived valences of job performance.

Perceived expectancy

The main effect of goal conditions shows that perceived expectancy in the no-goal condition is significantly higher than perceived expectancy in the free-choice-goal condition. This means that under self-set-goal conditions, "goal setting," rather than "goal difficulty," affects perceived expectancy. In other words, there were

no significant differences in perceived expectancy among the hard-self-set-goal condition, free-choice-self-set-goal condition, and easy-self-set-goal condition. This result is interesting since previous research, which focused on assigned-goal conditions (rather than on self-set-goal conditions), shows that, as the goal becomes harder, the expectancy becomes lower (e.g., Campbell, 1984; Mento et al., 1980). The result of the present research regarding the main effect of goal conditions on expectancy, however, should be taken with caution since the two-way interaction between goal conditions and NM is significant.

For low NM-subjects, the hard-self-set-goal condition shows significantly greater expectancy than either the easy-self-set-goal condition or the free-choice-self-set-goal condition. For high-NM subjects, however, there is no significant differences in perceived expectancy among self-set-goal conditions. In addition, under the hard-self-set-goal condition, low-NM subjects have higher perception of expectancy than high-NM subjects. The fact that NM significantly interacts with goal conditions to influence expectancy is interesting, especially that previous research has hardly been able to explain the puzzling relationship between expectancy and goals. The present research, therefore, suggests that NM and types of choice of self-set goals are important dimensions that would be able to explain variance in perceived expectancy (effort-

performance relationship). The implication for organizations is to satisfy people's need regarding money so that they can stop worrying about it, especially when the organization emphasizes hard-goal setting.

Accordingly, the research hypothesis concerning expectancy is not supported since self-esteem neither significantly interacted with goal conditions, nor significantly correlated with expectancy. However, TSSE, independent of goal conditions, is positively significantly correlated with perceived expectancy, which is consistent with the research arguments, holding the effects of goal conditions constant.

The question now is, does the expectancy variable account for the result obtained by this research? The result of the research is only partially positively supportive to this question. The relationship between PPG and expectancy is significantly positive and stronger under the hard-goal condition than under either the easy-goal condition or free-choice-goal condition which is in the expected direction. In addition, the relationship between expectancy and PPG is also significantly positive for both high- and low-self-esteem subjects. However, this result is not in the expected direction and is probably due to the fact that low-self-esteem subjects are poor estimators of their ability, consistent with Lawler's (1973) expectancy model.

Moreover, while there is a significant relationship between expectancy and PPG, there is no significant relationship between expectancy and productivity. To support further this result, the present research shows that subjects have significantly higher expectancy under the no-goal condition than under the free-choice-goal condition. However, subjects under the latter condition have significantly higher productivity than under the former. In addition, while low-NM subjects show significantly higher MPG (and higher expectancy) under the hard-goal condition than under the other-goal conditions, low-NM subjects do not show significantly higher productivity under the hard-goal condition than under the other-goal conditions. These two examples suggest that there is no relationship between expectancy and productivity. This result is consistent with previous research (e.g., Locke et al., 1984; Garland, 1984; Matsui et al., 1981; Mento et al., 1980) which reached a similar conclusion.

The present research, however, showed that there is a significant positive relationship between the expectancy of reaching different performance levels (as measured by self-efficacy scale) and productivity. Locke et al., (1984) have shown a similar result. The reasons for the ability of the self-efficacy scale to predict performance, as opposed to the typical expectancy measure, is explained

fully in a previous part of this research (see pp. 33-34).

Future research should clarify the puzzling results of expectancy and performance under the application of different goal conditions such as different conditions of self-set goals vs assigned goals using both expectancy and self-efficacy measures. In addition, NM should further be investigated by applying a NM measure with more than single-item scale so its reliability can be examined.

Perceived valences of job performance

This research hypothesized that perceived total valence of job performance (a composite measure of valence of job performance regarding money, pride, entertainment, and low boredom) will be the highest for high-self-esteem individuals who are exposed to situations in which hard-self-set goals are emphasized, and in which piece-rate plans are applied.

The result of this research does not provide support to this hypothesis. The result shows that goal conditions and task-specific self-esteem (TSSE) interact significantly to influence perceived total valence of job performance (PTVJP). This result is surprising because methods of payment are not found to be related to PTVJP. The reason for this may be related to the security that the hourly-payment system provides relative to the piece-rate system

which was discussed previously.

While the interaction between TSSE and self-set-goal conditions is significant, there are no significant differences in PTVJP among goal conditions for both high- and low-self-esteem subjects (i.e., no conditions effect). However, it is found that PTVJP for high-TSSE subjects is significantly higher than PTVJP for low-TSSE subjects under the free-choice-self-set-goal condition (TSSE effect). This "TSSE effect" could be explained by indicating that, under the free-choice-self-set-goal condition, subjects' perception of self-control is assumed to be high relative to the other-goal conditions, as explained before, and consequently, this could serve as an additional outcome. The fact that this effect is more pronounced for high-TSSE subjects than for low-TSSE subjects might be related to the fact that the former are more believing in their self-competency than the latter, therefore, valences of self-control are enhanced and served as an additional outcome only for high-TSSE subjects, but not for low-TSSE subjects.

An interesting result is found regarding valences of low level of boredom. Valences of low level of boredom are found to be significantly higher under the hard-goal conditions than under the no-goal conditions. This result supports Locke and Bryan's (1967) argument that hard goals enhance task interest than easy goals and no goals.

While the research hypothesis is not supported

concerning PTVJP, the correlation between "perceived total valences of job performance" and the following variables is significantly positive: productivity, PPG, MPG, overall satisfaction, goal commitment, satisfaction with work, and satisfaction with the overall job. These results are in the expected direction.

PTVJP is only partially able to explain the research findings. For example, taking the whole sample into consideration, the relationship between PTVJP and both PPG and productivity is significantly positive. In addition, the relationship between PPG and productivity is also significantly positive ($r = .2816$; $p = .000$). This latter relationship, however, still significantly positive ($r = .2743$; $p = .001$) even after controlling for the effect of PTVJP, although it becomes less stronger. That means that PTVJP cannot completely explain the effects of goals on productivity.

Contrasting the motivational influence of piece-rate system vs hourly-rate system in terms of PTVJP is shown in Table 53. Examining Table 53 reveals that under the hourly plans, although money was not contingent on performance, the correlation between PTVJP and the following variables are significantly positive: PPG, productivity, MPG, goal commitment, self-efficacy, and overall satisfaction, while under piece-rate plans most of those variables are not significantly related to PTVJP (i.e., PPG, MPG,

productivity, and strength of self-efficacy). However, only the correlations between PTVJP and both PPG and productivity under the hourly-rate plans were significantly higher than equivalent correlations under the piece-rate plans.

The question now is why such a puzzling result tends to happen. Subjects may have enjoyed an hourly payment system more than a piece-rate system because outcomes under the former are definite while under the latter they are not. The implication for organizations is to design the incentive system in such a way that hourly payment is not superior over the incentive system in terms of security.

Personality characteristics seem to moderate the relationship between PTVJP and some dependent variables. While both high- and low-self-esteem subjects show significant positive relationships between PTVJP and the following variables: PPG, goal commitment, and satisfaction with work; the relationships between PTVJP and the following variables: productivity, MPG, overall satisfaction, and strength of self-efficacy are found to be positively significant only for high-self-esteem subjects (see Table 52). However, only the correlations between PTVJP and both productivity and overall satisfaction for high-self-esteem subjects were significantly higher than equivalent correlations for low-self-esteem subjects. In addition, the correlation between

MPG and PTVJP is found to be significantly positive only for high-TSSE subjects, and this correlation for high-TSSE subjects was significantly higher than equivalent correlation for low-TSSE subjects. These results are in the expected direction and suggest that personality characteristics are important variables in explaining the relationship between PTVJP and several dependent variables such as MPG, productivity, and overall satisfaction.

SUMMARY AND CONCLUSION

This research focused on the impact of the interaction among self-esteem (SE), methods of payment (MP), and self-set-goal conditions (SSGC) on personal goals, productivity and satisfaction as well as the mechanism by which this interaction takes place. The first hypothesis which focused on the impact of MP, SE, and SSGC on percentage of personal goals (PPG) and magnitude of personal goals (MPG) was not supported. Significant two-way interactions were found between SE and SSGC in influencing PPG; between task-specific self-esteem (TSSE) and MP in influencing MPG; and between SSGC and need for money (NM) in influencing MPG. High-SE subjects, as opposed to low-SE subjects, set significantly higher PPG under the hard-goal condition than under the easy- or free-choice-goal conditions. On the other hand, high-TSSE subjects, as opposed to low-TSSE

subjects, set goals of significantly higher magnitude under the piece-rate plans than under the hourly-rate plans. In addition, although both high- and low-NM subjects set goals of significantly higher magnitude under the hard-goal conditions than under the easy-goal conditions, the former subjects show stronger response to the effects of SSGC than the latter.

These results suggest that: 1. determinants of goal choice are not the same for PPG and MPG. While the interaction between personality characteristics and SSGC was important in the choice of both kinds of goals, neither the main nor the interactive effects of MP were found to be significant in influencing PPG as compared to MPG. This suggests that when goals are specific and quantitative (i.e., similar to PPG), offering monetary incentives to induce people to set higher goals may not be effective. On the contrary, when goals are difficult (i.e., similar to MPG), monetary incentives are important to help people carry the burden of difficult goals; and 2. the thesis of this research regarding the importance of personality characteristics and SSGC to the effectiveness of piece-rate plans was partially supported. Only personality characteristics were proven to be important. Accordingly, high-TSSE individuals should be selected to work under these plans.

Hypothesis 2 which focused on the impact of SE, SSGC,

and MP on productivity was not supported. A significant two-way interaction was found between MP and SSGC.

Subjects had significantly higher productivity under piece-rate plans than under hourly-rate plans at the easy- and free-choice-goal conditions, while there were no significant differences in productivity between piece-rate plans and hourly-rate plans at the hard-goal and no-goal conditions. That is, money influences productivity only when the goal is either easy or of moderate difficulty than when the goal is difficult or absent. This suggests that:

1. easy to moderate goals mediate the effect of incentives on productivity;
2. although piece-rate plans reward people based on their performance (rather than on their goal attainment) which should increase motivation, piece-rate plans are risky as compared to hourly-plans when people are asked to set difficult goals. Although achieving difficult goals under piece-rate plans provides the highest expected outcomes, it also provides the highest expected loss relative to hourly-plans which make the latter systems superior to the former in terms of security. Future research should examine whether insecurity is an inherent problem of the design of the piece-rate plans themselves, or an inherent problem of the situation in which these plans are applied. If insecurity is a design problem, then organizations should expect a piece-rate system to increase productivity only when the

goal is of moderate difficulty than when the goal is either difficult or absent. If insecurity is a situational problem, then organizations should allow people to have great control over the task so piece-rate systems can be effective in increasing productivity in situations in which setting a hard goal is emphasized as compared to hourly-systems.

Hypothesis 2 Concerning the impact of SE, SSGC, and MP on satisfaction is partially supported. A significant three-way interaction among these variables in influencing overall satisfaction was found. Satisfaction means among MP and SSGCs were in the expected direction for high-TSSE subjects, as opposed to low-TSSE subjects. This suggests that personality and situational interaction is crucial to understand satisfaction.

Concerning the mechanism of influence, Hypothesis 3 which focused on the impact of SE and SSGC on expectancy is not supported. A significant main effect of TSSE on expectancy (in the expected direction) and a significant two-way interaction between NM and SSGC were found. Low-NM subjects, as opposed to high-NM subjects, had higher expectancy under the hard-goal condition than under the easy- and free-choice-goal conditions. This finding directs attention to the possibility of an integration of goal theory and expectancy theory regarding expectancy by taking individual differences in need of money into

account. While expectancy was significantly positively correlated with PPG, expectancy was not significantly correlated with productivity, which suggests that expectancy was only partially able to explain the result of this research. Previous research has shown that the inability of expectancy to fully explain the effects of goals on performance was related to the way in which expectancy was measured. The present research supported this explanation and showed that expectancy can explain the goal setting effects on performance by using the self-efficacy scale instead of the typical expectancy measure (effort-performance probability). The implication for researchers is that they should measure expectancy by using the self-efficacy scale reported in Locke et al.'s (1984) study.

Hypothesis 4 which was concerned with the impact of SE, MP, and SSGC on perceived total valences of job performance (PTVJP) was not supported. A significant two-way interaction was found between TSSE and SSGC. However, no further explanation was provided since the simple effect was not significant. Although the correlations between PTVJP and PPG, MPG, productivity, and satisfaction were found to be significant and in the expected direction (for the whole sample), the relationships between PTVJP and PPG, productivity, and MPG were found to be significant only under the hourly-system than under the piece-rate system.

This suggests support of the notion that greater insecurity is experienced under the piece rate system than under the hourly system. Accordingly, PTVJP was partially able to explain the result of this research.

The general conclusions from this research are: First, personality characteristics interact with organizational contextual variables (i.e., MP and/or SSGCs) to influence most of the dependent variables [i.e., PPG, MPG, goal attainment, OS, and satisfaction with the task (ST)], as well as the intervening variables (i.e., perceived expectancy and PTVJP). In addition, the effects of personality characteristics are more likely to emerge (regardless of MP) in the free-choice-self-set-goal conditions than in the hard- and easy-self-set-goal conditions in influencing PPG, MPG, OS, ST, perceived expectancy, and PTVJP. This is because the free-choice-self-set-goal condition, relative to the other self-set goal conditions, involves no instructions from the experimenter to subjects on selecting either hard or easy goals, so that it is purely a reflection of the individual differences.

Second, contrary to the claim made earlier by this research, type of choice of self-set goals is an unimportant variable for the effectiveness of the piece-rate system. For example, the results of this research showed that, under the application of the piece-rate

system, there were no significant differences between the hard-goal condition and the easy-goal condition in influencing PPG, MPG, productivity, goal attainment, satisfaction, perceived expectancy, and PTVJP. The researcher's interpretation of this finding is as follows: as previously explained, piece-rate systems are not structured to force people to set difficult goals that can harm motivation (see P. 9-10); however, this negative aspect of the design of piece rate systems may also very well act as a positive one and add strength to these systems--through the complete freedom exercised in goal setting and the payment that is contingent on each unit produced. Therefore, these pluses and minuses might have canceled each other, resulting in no significant differences among the hard-goals, easy-goals, and free-choice-goal conditions in influencing the dependent and intervening variables in this research. Future research should replicate the present research with extensive measurements of subjects' attitudes and reactions to type-of-choice-of self-set goals. Such research may also be important because type-of-choice-of-self-set goals is a new--previously unexamined--construct proposed by this research that requires further exploration.

The general theoretical implications from these general conclusions for both goal and incentive theorists are:

First, the interaction between personality and situational variables is important to the effectiveness of goal-setting and monetary incentives. This implication is consistent with Steers and Porter (1974) who argue that a full understanding of the goal-setting effects on behavior can only be accomplished through examining situational and personality variables that affect goal setting. This implication is also important regarding the effectiveness of monetary incentives because it opposes the predominant thoughts that the determinants of incentives are situational in nature (i.e., the more one pays, the harder the work). It should be made clear, however, that the present research does not attack this principle, nor does it undervalue the importance of money as a motivator. On the contrary, the present research suggests conditions under which the effectiveness of this principle could be improved. For example, this study suggests that task-specific self-esteem is an important variable for the piece-rate system to be effective. It claims that, under the piece-rate system, organizations should choose those who perceive themselves as capable of performing the task effectively since without this perception no one will work hard, and consequently, earn money.

Second, researchers who are concerned with demonstrating the effects of personality characteristics in a given goal situation should apply a research design which

allows people preferences and styles to be exercised (i.e., choose a design where people's control over the goal is high). This is important because, according to Locke et al. (1981), most previous studies assigned goals to the subjects rather than allowed subjects to act in accordance with their own preferences (i.e., allowed them to set their own goals). According to Locke et al. (1981) the assigned-goal design masked the individual differences effects because when goals are assigned, subjects respond to situational demands, rather than act in accordance with their own demands and styles.

The practical implications for organizations are as follows: (1) to hire people with high self-esteem; and (2) to train them to do the task effectively. However, the first suggestion is questionable as far as blue collar workers are considered. Those workers are hired in large numbers according to their ability to do the task effectively, regardless of their scores on the self-esteem tests. Because of those large numbers, organizations may not have the capacity, nor the willingness, to administer such personality tests because such an approach may be costly, time consuming, and complex. Accordingly, the present research suggests that organizations should collectively rely on a third party (such as some testing agencies or other specialized institutions) to administer the personality tests for a pool of qualified applicants.

Such specialized agencies and institutions may be able to conduct such tests at lower costs and with better results than when organizations individually bear such responsibilities. The collective efforts of all organizations, through the use of a third party, to choose the right applicant for the right situation are important and justified since the average worker, who fits all situations, can no longer be effective, as shown in this research.

In addition, under the application of the piece-rate system, organizations should encourage workers to set goals (since goals may remove task boredom and create interest in the task, which is unlikely to be provided by the piece-rate task itself). The results of the present research regarding productivity showed that, under the application of piece-rate plans, productivity was higher in the goal-setting conditions (regardless of goal levels) than in the no-goal-setting conditions. Therefore, while organizations should encourage workers to set goals, they should not advise workers about which types of goals (i.e., hard, moderate, or easy) they should set. The fact that the piece-rate system is designed in such a way that people are free to set their own goals and are paid according to their performance (rather than goal attainment) is found by the present research to have some merit which should not be overlooked.

LIMITATIONS OF THE RESEARCH

This research has shed light on the determinants and the processes of self-directed personal goals. The results of this research are expected to be significant because:

- (1) goal theorists have dealt extensively with the consequences of goal choices, rather than with goal choice itself, its determinants, and the mechanism of influence;
- (2) while a great deal of research has focused extensively on assigned goal situations, much less research has been directed at explaining self-set goal situations (both determinants and processes). Studying self-set goals is important since "the goals of the organization cannot simply be assumed to be those of the individual" (Austin, 1989; p. 430).

While interaction research is worthwhile because it may lead to a greater understanding of the behavior under investigation (Keppel, 1982), the presence of an interaction usually requires more complexity in researchers' theoretical explanations of data than would be the case if no interaction was present (Keppel, 1982). Accordingly, some of the research results (i.e., those dealing with satisfaction and perceived total valences of job performance) were difficult to interpret, especially when the interaction is significant, but the simple effect is not.

While all effort has been made by the researcher to simulate a real life situation, several limitations are worth noting. Regarding the external validity (generalizability of experimental findings), the results of this research can only be generalized to Baruch College, City University of New York, students. This is because a college students sample cannot be representative of blue collar workers since college students differ in several aspects from blue collar workers. For example: (1) students are more likely to be educated, and to have less family responsibilities (since they are less likely to be married and to have children) than real life workers. For instance, the result of this research showed that 88.6% of the students were single; and (2) students were volunteers, while real life workers are more likely to be nonvolunteers. According to Rosenthal and Rosnow (1979), volunteer subjects differ from nonvolunteer subjects. For example, volunteers tend to be more educated, more intelligent, have a higher social class and a higher need for approval than nonvolunteers (Rosenthal & Rosnow, 1979). In addition, the short time work of the experiment, the artificial task, and the inability of the environment of the experiment to reflect the complexity of the real life work, made the external validity a critical issue.

Furthermore, regarding the internal validity (the extent to which the experimental manipulations influence

the dependent variables), the following limitations are not so much limitations unique to the methodology used here as they are issues related to the use of an experimental design in general. Research (e.g., Cook & Campbell, 1976; Locke, 1986; Weick, 1979) shows that laboratory studies suffer from some threats to internal validity which limit their usefulness. These threats, according to Cook and Campbell (1976), are: (1) hypotheses guessing within experimental conditions (i.e., subjects might figure out the research hypotheses and change their behavior accordingly); (2) evaluation apprehension (i.e., subjects might feel that they are being evaluated and, consequently, try to be competent and psychologically healthy); and (3) Hawthorne effect (subjects' behavior may improve because of the care they receive in the lab regardless of the experimental manipulations). To the extent that such threats are present, the findings of the present research must be taken with caution.

Moreover, regarding the statistical conclusion validity (valid conclusions about the existence of treatment effects which are inferred from statistically significant differences among treatment conditions--see Cook and Campbell, 1976), the results of the present research--which used the Scheffe test for testing significant differences among the treatment conditions--should also be taken with caution. That is, the Scheffe's

test is a conservative multiple comparison test that reduces the "family wise error rate" (i.e., the probability that a set of comparisons will contain one or more type I errors which increases as the number of comparisons increases in the experiment) by guaranteeing that this rate be kept at .05 regardless of the number of comparisons involved in the analysis. This is accomplished by the Scheffe test through using a larger critical value of F which makes it considerably difficult to reject the null hypothesis, i.e., reducing type I error. However, the Scheffe's test pays a price for doing that. That is, "if we reject fewer null hypotheses (that is, reduce type I error), we will detect fewer real differences--thus increasing type II error--as a consequence" (Keppel & Saufley, 1980; p. 142). Accordingly, many of the "considerable differences" among the experimental conditions were not capable of being detected as "statistically significant differences" according to the Scheffe's test because of this problem. In addition, the results obtained by using the TSSE scale should also be taken with caution because such a scale was found, in the present research, to have somewhat low reliability (internal consistency). Moreover, the results obtained by using need for money measure should also be taken with caution because its reliability cannot be determined since it is a single-item scale.

Although the task employed in this research was perfectly suitable to the application of goal difficulty and monetary-incentive plans (i.e., simple, repetitive), such a task limits the usefulness of this research since most tasks in the application are somewhat more complex and unstable.

However, those limitations should not reduce the importance of the research as a well controlled study that allowed the researcher to test causal hypotheses and relationships, and to explore a new, previously unexamined, construct which is type-of-choice-of-self-set goals. Locke (1986) points out that "laboratory studies are actually superior to most field studies because they typically use hard performance measures" (p. 4). Surprisingly, Dipboye and Flanagan (1979) point out that both laboratory and field studies are guilty of limited generalization. That is, researchers in laboratory studies seem to develop a psychology of college students, while researchers in field studies seem to develop a psychology of the self-report of male, technical, managerial, and professional employees of economic organizations. So field studies are also limited by their actors (constant focusing on males rather than females, and on professionals and managerial employees while ignoring other occupational groups), settings (constant studying of economical productive organizations while ignoring other organizational types), and behavioral

measurements (constant focusing on self-report attitude measurements while neglecting productivity data which is the major interest to organizations) (Dipboye & Flanagan, 1979; Locke, 1986).

Appendix A

The Questionnaire and the Experimental Manipulations

We have some research data that needs to be coded. We would like your help in coding this data. We are also interested in knowing your reaction to this kind of work. Therefore, we would like you to answer some questions before and after coding this research data. Thank you;

Please answer the following questions:

1. Sex: 1. Female.....
2. Male.....
2. Current age:
3. Year in college:
 1. Freshman.....
 2. Junior.....
 3. Sophomore.....
 4. Senior.....
4. Marital status:
 1. Married.....
 2. Single.....
 3. Separated.....
 4. Divorced.....
5. Major in college:
.....
6. Your own income level:
 1. Less than \$5,000 yearly.....
 2. \$5,000 to \$10,000 yearly.....
 3. \$10,000 to \$15,000 yearly.....
 4. \$15,000 to \$20,000 yearly.....
 5. \$20,000 and up yearly.....
7. Occupation (if any):.....
8. Type of organization (if applicable):
 1. Industrial.....
 2. Services.....
 3. Other (please specify).....
9. How much do you need the money that you will get for participating in this study
Check one:
 1. Not At All
 2. A Little
 3. Somewhat
 4. Quite a Bit
 5. Very Much

10. Please mark each statement in the following way:
 If the statement describes how you usually feel, put a check (✓) in the column, "Like Me."
 If the statement does not describe how you usually feel, put a check (✓) in the column "Unlike Me"
 There are no right or wrong answers.

	Like Me	Unlike Me
1. I often wish I were someone else.	_____	_____
2. I find it very hard to talk in front of a group.	_____	_____
3. There are lots of things about myself I'd change if I could.	_____	_____
4. I can make up my mind without too much trouble.	_____	_____
5. I'm a lot of fun to be with.	_____	_____
6. I get upset easily at home.	_____	_____
7. I'm proud of my school work.	_____	_____
8. It takes me a long time to get used to anything new.	_____	_____
9. I'm popular with kids my own age.	_____	_____
10. My family usually considers my feelings.	_____	_____
11. I give in very easily.	_____	_____
12. I'm pretty happy.	_____	_____
13. My family expect too much of me.	_____	_____
14. It's pretty tough to be me.	_____	_____
15. Other people usually follow my ideas.	_____	_____
16. No one pays much attention to me at home.	_____	_____
17. I have a low opinion of myself.	_____	_____
18. Things are all mixed up in my life.	_____	_____
19. There are many times when I'd like to leave home.	_____	_____
20. I often feel upset about the work that I do.	_____	_____
21. I'm not as nice looking as most people.	_____	_____
22. If I have something to say, I usually say it.	_____	_____
23. Kids pick on me very often.	_____	_____
24. My family understand me.	_____	_____
25. Most people are better liked than I am.	_____	_____
26. I usually feel as if my family is pushing me.	_____	_____
27. I often get discouraged at what I am doing.	_____	_____
28. Things usually don't bother me.	_____	_____
29. I can't be depended on.	_____	_____

11. Indicate the degree to which you agree or disagree with the following statements (Make sure to circle only one number to the right of each statement).

1. Strongly agree
2. Agree
3. Disagree
4. Strongly disagree

1. I feel that I'm a person of worth, at least on an equal basis with others.	1 2 3 4
2. I feel that I have a number of good qualities.	1 2 3 4
3. All in all, I am inclined to feel that I am a failure.	1 2 3 4
4. I am able to do things as well as most other people.	1 2 3 4
5. I feel I do not have much to be proud of.	1 2 3 4
6. I take a positive attitude toward myself.	1 2 3 4
7. On the whole, I am satisfied with myself.	1 2 3 4
8. I wish I could have more respect for myself.	1 2 3 4
9. I certainly feel useless at times.	1 2 3 4
10. At times I think I am no good at all.	1 2 3 4

General instructions

Now that you have enough experience with the coding task, we would like you to answer a series of questions related to it. Your answers will help us evaluate the efficiency of the coding methods we are using and the payment rate we are offering. Your answers to these questions, of course, will be kept anonymous, so please answer them honestly and quickly, but carefully. Please do not omit any question.

Thank you.

12. Indicate the degree to which you agree or disagree with the following statements (Make sure to circle only one number to the right of each statement).

1. Strongly disagree
2. Disagree
3. Neither agree nor disagree
4. Agree
5. Strongly agree

1. I have mastered this task.	1 2 3 4 5
2. I do not perform this task as well as I would like.	1 2 3 4 5
3. I am certain I can perform this task well.	1 2 3 4 5
4. It is just not possible for me to perform this task at the level I would like to.	1 2 3 4 5
5. I think my performance in this task could be improved substantially.	1 2 3 4 5
6. Considering the time spent on this task, I feel thoroughly familiar with this task.	1 2 3 4 5
7. I honestly believe I have all the skills necessary to perform this task well.	1 2 3 4 5
8. No one knows this task better than I do.	1 2 3 4 5

Each subject received one of the following manipulations of methods of payment

A PIECE RATE SYSTEM

You have already earned an amount of \$4 for your participation in the 20 minutes of work that you have just completed (the practice trial). Now, for the next 20 minutes of work, you are going to be paid by what is known as a PIECE RATE SYSTEM. This means that your earnings will be based on the amount of work you do. For example, for each answer you code correctly we will pay you 1¢. Thus, if you code correctly 400 answers in the next 20 minutes, you will receive \$4. If you correctly code 600 answers in the next 20 minutes, you will receive \$6, and so on.

AN HOURLY FLAT RATE SYSTEM

You have already earned an amount of \$4 for your participation in the 20 minutes of work that you have just completed (the practice trial). Now, for the next 20 minutes of work, you are going to be paid by what is known as an HOURLY FLAT RATE SYSTEM. This means that your earning will be based on the amount of time you work. We will pay you \$4 for the next 20 minutes of work you do correctly coding questionnaires

FEEDBACK

Examining of your productivity in the practice trial reveals that you have correctly coded answers in the last 20 minutes of work.

In addition, each subject received also one of the following three manipulations regarding self-set goal conditions

Coding of these questionnaires is very urgent. We have lots of questionnaires that need to be coded and the school has insisted that the coding should be finished soon. So we would like you to set a DIFFICULT AND CHALLENGING GOAL for yourself, and work very hard to achieve that goal in the next 20 minutes of work. Please set your difficult goal in terms of percentage improvement in productivity over your past productivity in the practice trial (that is, percentage increase in the number of answers correctly coded).

SET A DIFFICULT GOAL FOR YOURSELF

At this time there is no urgency regarding the coding of these questionnaires. We have no deadline, so take your time and just work carefully. Please choose an EASY GOAL for yourself that you know you could easily achieve in the next 20 minutes of work. Please set your easy goal in terms of percentage improvement in productivity over your past productivity in the practice trial (that is, percentage increase in the number of answers correctly coded).

SET AN EASY GOAL FOR YOURSELF

Please select for yourself a goal that you would like to work toward in the next 20 minutes. You are free to choose WHATEVER GOAL you would like to achieve. In other words, you are free to choose any goal level (easy, difficult, or medium) you would like to work toward in the next 20 minutes of work. Please set your goal in terms of percentage improvement in productivity over your past productivity in the practice trial (that is, percentage increase in the number of answers correctly coded)

SET ANY GOAL FOR YOURSELF

Please write, in the box below, the goal that you just chosen for yourself. Write your goal in terms of percentage improvement in productivity over your productivity in the practice trial.

-----X

13. How hard do you expect this goal to be for yourself?

Check one:

1. A very easy goal
2. An easy goal
3. A somewhat easy goal
4. A medium goal
5. A somewhat difficult goal
6. A difficult goal
7. A very difficult goal

Read Carefully

Read Carefully

- 14A Based upon the knowledge you have of your capabilities and skills, if you make a very high effort at this task, what do you think is the probability that you can achieve a high level of productivity, that is, you would be able to code correctly a high number of answers?

With a very high effort, I think the probability that I can achieve a high level of productivity is: (Please make a circle around your selection. Make sure to circle only one percentile)

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
VERY LOW PROBABILITY			MEDIUM PROBABILITY				VERY HIGH PROBABILITY			

Read Carefully

Read Carefully

- 14B Based upon the knowledge you have of your capabilities and skills, if you make a very low effort at this task, what do you think is the probability that you can achieve a high level of productivity, that is, you would be able to code correctly a high number of answers?

With a very low effort, I think the probability that I can achieve a high level of productivity is: (Please make a circle around your selection. Make sure to circle only one percentile)

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
VERY LOW PROBABILITY			MEDIUM PROBABILITY				VERY HIGH PROBABILITY			

Read Carefully

- 13A Below are listed a series of things which are possible consequences of the coding task you are going to do. If you were to achieve a high level of productivity (i.e., you correctly code a large number of answers), what would you say is the probability that you will experience each of these possible consequences?

If I achieve high productivity on this task, I think the probability of my getting higher pay is: (Please make a circle around your selection. Make sure to circle only one percentile)

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
VERY LOW PROBABILITY				MEDIUM PROBABILITY				VERY HIGH PROBABILITY		

If I achieve high productivity on this task, I think the probability of my getting a high feeling of pride from the work achieved is: (Please make a circle around your selection. Make sure to circle only one percentile)

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
VERY LOW PROBABILITY				MEDIUM PROBABILITY				VERY HIGH PROBABILITY		

If I achieve high productivity on this task, I think the probability of my getting a high feeling of entertainment is: (Please make a circle around your selection. Make sure to circle only one percentile)

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
VERY LOW PROBABILITY				MEDIUM PROBABILITY				VERY HIGH PROBABILITY		

If I achieve high productivity on this task, I think the probability of my getting a high feeling of boredom is: (Please make a circle around your selection. Make sure to circle only one percentile)

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
VERY LOW PROBABILITY				MEDIUM PROBABILITY				VERY HIGH PROBABILITY		

Read Carefully

Read Carefully

- 132 Below are listed a series of things which are possible consequences of the coding task you are going to do. If you were to achieve a low level of productivity (i.e., you correctly code a small number of answers), what would you say is the probability that you will experience each of these possible consequences?

If I achieve low productivity on this task, I think the probability of my getting higher pay is : (Please make a circle around your selection. Make sure to circle only one percentile)

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
VERY LOW PROBABILITY				MEDIUM PROBABILITY				VERY HIGH PROBABILITY		

If I achieve low productivity on this task, I think the probability of my getting a high feeling of pride from the work achieved is: (Please make a circle around your selection. Make sure to circle only one percentile)

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
VERY LOW PROBABILITY				MEDIUM PROBABILITY				VERY HIGH PROBABILITY		

If I achieve low productivity on this task, I think the probability of my getting a high feeling of entertainment is: (Please make a circle around your selection. Make sure to circle only one percentile)

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
VERY LOW PROBABILITY				MEDIUM PROBABILITY				VERY HIGH PROBABILITY		

If I achieve low productivity on this task, I think the probability of my getting a high feeling of boredom is: (Please make a circle around your selection. Make sure to circle only one percentile)

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
VERY LOW PROBABILITY				MEDIUM PROBABILITY				VERY HIGH PROBABILITY		

16. In general, how attractive are the following things to you?
(Please circle the number that most accurately reflects the degree of attraction you feel for each of the following things)

1. Money from the work

1	2	3	4	5	6
Not At All		Somewhat			Extremely
Attractive		Attractive			Attractive

2. Pride from the work achieved

1	2	3	4	5	6
Not At All		Somewhat			Extremely
Attractive		Attractive			Attractive

3. feeling of entertainment

1	2	3	4	5	6
Not At All		Somewhat			Extremely
Attractive		Attractive			Attractive

4. Feeling of Boredom

1	2	3	4	5	6
Not At All		Somewhat			Extremely
Attractive		Attractive			Attractive

17. Please indicate the extent to which you agree or disagree with each one of the following statements regarding the goal that you have just chosen to work for in the next 20 minutes of work. (Make sure to circle only one number to the right of each statement).

1. Strongly disagree
2. Disagree
3. Slightly disagree
4. Neither agree nor disagree
5. Slightly agree
6. Agree
7. Strongly agree

1. I am strongly committed to pursuing my goal.	1	2	3	4	5	6	7
2. I am willing to put forth a great deal of effort beyond what I'd normally do to achieve my goal.	1	2	3	4	5	6	7
3. Quite frankly, I don't care if I achieve my goal or not.	1	2	3	4	5	6	7
4. There is not much to be gained by trying to achieve my goal.	1	2	3	4	5	6	7
5. It is quite likely that my goal may need to be revised, depending on how things go in the next work period.	1	2	3	4	5	6	7
6. It wouldn't take much to make me abandon my goal.	1	2	3	4	5	6	7
7. It's unrealistic for me to expect to reach my goal.	1	2	3	4	5	6	7
8. Since it's not always possible to tell how tough courses are until you've been in them awhile, it's hard to take my goal seriously.	1	2	3	4	5	6	7
9. I think my goal is a goal to shoot for.	1	2	3	4	5	6	7

Please write, in the box below, the goal you chose in the beginning of the 20 minutes of work that you have just completed. Write your goal in terms of the percentage improvement in productivity over your productivity in the practice trial.

—X

18. How hard did you think this goal would be for yourself?

Check one:

1. A very easy goal
2. An easy goal
3. A somewhat easy goal
4. A medium goal
5. A somewhat difficult goal
6. A difficult goal
7. A very difficult goal

19. In column A please write either Y for Yes or N for No which refers to your belief of whether you would be able to do the following levels of productivity. In column B please indicate the degree of certainty, or in other words, how much confidence you think you are capable of achieving those levels of productivity. Please use the scale below when reporting your degree of confidence.

	0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%		
	VERY LOW PROBABILITY	MEDIUM PROBABILITY	VERY HIGH PROBABILITY
		Column A (Y= Yes; N= No) CAN DO	Column B (0 to 100%) Certainty
(1) I can code 100 answers correctly in 20 minutes		-----	-----
(2) I can code 200 answers correctly in 20 minutes		-----	-----
(3) I can code 300 answers correctly in 20 minutes		-----	-----
(4) I can code 400 answers correctly in 20 minutes		-----	-----
(5) I can code 500 answers correctly in 20 minutes		-----	-----
(6) I can code 600 answers correctly in 20 minutes		-----	-----
(7) I can code 700 answers correctly in 20 minutes		-----	-----

(8) I can code
800 answers correctly
in 20 minutes

(9) I can code
900 answers correctly
in 20 minutes

(10) I can code
1000 answers correctly
in 20 minutes

(11) I can code
1100 answers correctly
in 20 minutes

20. Please indicate the extent to which you agree or disagree with each one of the following statements. (Make sure to circle only one number to the right of each statement).

1. Strongly disagree
2. Disagree
3. Slightly disagree
4. Neither agree nor disagree
5. Slightly agree
6. Agree
7. Strongly agree

1. I am very happy with the amount of money I made from working on this task. 1 2 3 4 5 6 7
2. Considering my skills and the effort I put into this work, I am very satisfied with my pay. 1 2 3 4 5 6 7
3. All in all, I am satisfied with this job. 1 2 3 4 5 6 7
4. In general, I don't like this job. 1 2 3 4 5 6 7
5. In general, I like working here. 1 2 3 4 5 6 7

21. To what degree are you satisfied with the payment system being applied to you? (Make a circle around your selection. Make sure to circle only one number)

1	2	3	4	5	6	7
Very		Neither	Satisfied			Very
Dissatisfied		Nor Dissatisfied				Satisfied

22. Think about your job here. If the word or phrase in each item below describes your feeling toward your job (work, pay) write a Y for YES in the space. If the item does not tell how you feel, write N for NO in the space. If you don't know how you feel exactly about the question write a ? in the space.

1. WORK

- Fascinating
- Routine
- Satisfying
- Boring
- Good
- respectful
- Creative
- Hot
- Pleasant
- Useful
- Tiresome
- Healthful
- Challenging
- On your feet
- Frustrating
- Simple
- Endless
- Gives sense of accomplishment.

23. Some people received specific instructions about setting a goal for productivity improvement in the beginning of the second 20 minutes of work. We need to know from you what instruction, if any, you received (Please make a circle around your selection).

- 1. I was instructed to set a Difficult goal.
- 2. I was instructed to set an Easy goal.
- 3. I was instructed to set Any goal.
- 4. I did not receive any instructions about setting a goal.

24. Describe the payment system that has been applied to you in the last 20 minutes of work:

Check one:

- 1. The amount of money I will receive will depend on how many answers I have coded correctly in the last 20 minutes of work; in other words, I will be paid according to a piece rate system.
- 2. The amount of money I will receive will depend on the amount of time I do correctly coding questionnaires regardless of how many answers I have coded; in other words, I will be paid according to an hourly flat rate system.

25. Did any of your friends explain to you the contents of the study before you participated? (Please place a check mark () on either a or b).

(a)-----Yes

(b)-----No

Thank you very much for your participation. Please do not explain any thing you have done here or reveal any amount of money you have received from working here to anyone. This information should be kept unknown to other students in order not to bias the results of the study. Thank you for your cooperation.

Appendix B

Intercorrelation Matrix of All Variables Measures

Table a
Intercorrelation Matrix of All Variable Measures
Total Sample (N = 104)

Variables	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15
X1 Percentage of Personal Goal (PPG)															
X2 Magnitude of personal Goal (MPG)	.348														
X3 Productivity	.281	.114													
X4 Goal Attainment	-.702	-.243	.388												
X5 Goal Commitment	.246	.200	.061	-.238											
X6 Overall Satisfaction	.161	.194	.116	-.043	.2656										
X7 Expectancy	.280	.002	.037	-.154	.2293	.007									
X8 Total Valences of Job	.300	.191	.132	-.229	.343	.341	.117								
X9 Self-Esteem	-.171	-.132	-.087	.130	.034	.043	.047	.002							
X10 Need for Money	.064	.134	.115	-.02	.037	.052	-.123	.1746	-.113						
X11 Task Specific Self-Esteem	.130	.063	.003	-.109	.136	.150	.270	.0376	.032	.162					
X12 Strength of Self-Efficacy	.245	.042	.272	-.043	.096	.162	.207	.151	-.051	-.025	.166				
X13 Magnitude of Self-Efficacy	.231	.049	.204	-.100	.144	.032	.240	.100	-.031	.044	.168	.7027			
X14 Total Instrumentality	.246	.126	.142	-.140	.241	.307	.101	.903	.041	.000	.086	.179	.121		
X15 Total Valences	.247	.214	.043	-.224	.427	.113	.093	.629	.002	.221	-.003	.042	.010	.270	

*p<.05
**p<.01
***p<.001

Appendix C
Additional Results

Table 55

Differences in Goal Attainment Between High and Low
Task-Specific-Self-Esteem at Easy-Goal-Hourly-Rate and
at Easy-Goal-Piece-Rate Conditions

Sources of Variations	DF	Sum of Squares	Mean Squares	F-Ratio
Task-Specific-Self-Esteem (TSSE) Effects				
1. Easy-Goal-Piece-Rate Condition				
Between Groups	1	40992.19	40992.19	.6340
Within Groups	21	1357833.15	64658.72	
Groups	N	Means	SD	
Low TSSE	14	60.1793	99.5913	
High TSSE	9	-26.32	391.93	
2. Easy-Goal-Hourly-Rate Condition				
Between Groups	1	26641.61	26641.61	1.32
Within Groups	21	423192.53	20152.02	
Groups	N	Means	SD	
Low TSSE	16	-.5394	144.91	
High TSSE	7	73.42	134.27	

Table 56

Differences in Perceived Total Valences of Job
Performance Between High and Low Task-Specific-Self-Esteem
at Easy-Goal-Hourly-Rate and at Easy-Goal-Piece-Rate Conditions

Sources of Variations DF Sum of Squares Mean Squares F-Ratio

Task-Specific-Self-Esteem (TSSE) Effects

1. Easy-Goal-Piece-Rate Condition

Between Groups	1	353060.09	353060.09	2.52
Within Groups	21	2935284.77	139775.46	

Groups	N	Means	SD
Low TSSE	14	732.64	436.28
High TSSE	9	478.77	240.00

2. Easy-Goal-Hourly-Rate Condition

Between Groups	1	62612.57	62612.57	1.34
Within Groups	21	978939.85	46616.18	

Groups	N	Means	SD
Low TSSE	16	450.75	210.35
High TSSE	7	564.14	229.193

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