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BEHAVIORAL RESEARCH

# ADVANCES IN ACCOUNTING BEHAVIORAL RESEARCH

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ADVANCES IN ACCOUNTING BEHAVIORAL RESEARCH  
VOLUME 21

# ADVANCES IN ACCOUNTING BEHAVIORAL RESEARCH

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# THE EFFECT OF MUTUAL MONITORING AND NEED FOR ACHIEVEMENT ON BUDGETARY SLACK IN A TEAM-BASED ENVIRONMENT

Vincent K. Chong and Nurul Farhana Khudzir

## ABSTRACT

*This chapter examines the effect of mutual monitoring and the personality trait of need for achievement on subordinates' budgetary-slack creation in a team-based environment. Experimental results show that the creation of budgetary slack is lower when mutual monitoring is present than when it is absent. The results also show that a two-way interaction between mutual monitoring and the personality trait of need for achievement affects subordinates' budgetary-slack creation.*

**Keywords:** Mutual monitoring; need for achievement; budgetary slack; team-based environment; budgetary control; personality trait

## INTRODUCTION

To date, prior studies have tended to focus on the budgetary slack created by individuals rather than on budgetary slack created by groups in a team-based environment. This is despite frequent criticism of individual-based studies that these findings may not be applicable in today's business environment, which is increasingly dominated by team- or group-based decision making (Cohen & Bailey, 1997; Wellins, Byham, & Dixon, 1994). An understanding of how relying on mutual-monitoring control is used to mitigate subordinates' budgetary-slack

creation in a team-based environment is essential because an increasing number of organizations has begun to place the responsibility of decision making on groups rather than on individuals. According to [Schopler et al. \(1993\)](#), team members involved in budget-setting processes can be influenced by self-interest in the same manner as individuals. Indeed, numerous studies ([Chong & Wan, 2014](#); [Schopler et al., 1993](#)) have found that team members working in groups tend to be more focused on acts of self-interest than when individuals are working alone. This is because groups provide a form of social support that encourages members to maximize their self-interest. For example, [Chong and Wan \(2014\)](#) find that project managers that have joint responsibility (i.e., in a team-based setting) for an investment project show a greater tendency to continue a failing project (i.e., engage in dysfunctional behavior) than team managers that have sole responsibility under private-information conditions. The term “mutual monitoring” refers to “the ability of peers to observe each other’s productive activities, and thereby obtain private information not available to their superior” ([Hannan, Towry, & Zhang, 2013](#), p. 1401). Agency theory states that it is expected that agents are wealth maximizers. Therefore, we expect that an agent will prefer to convey to the principal any information they gather about their peers (see [Ma, 1988](#)). For example, [Barron and Gjerde \(1997\)](#) find that mutual-monitoring control allows coworkers to set standards, observe peers’ results, and sanction team members if their efforts are below the monitor’s standards. To date, no studies have examined the reliability of a mutual-monitoring control in mitigating subordinates’ propensity to create budgetary slack in a team-based setting. This is despite findings that mutual-monitoring control can deter inappropriate or opportunistic behaviors by increasing the probability that such behaviors will be detected by coworkers ([Alchian & Demsetz, 1972](#); [Barron & Gjerde, 1997](#); [Loughry & Tosi, 2008](#)). This gap in the accounting literature provides the first motivation for our study.

Additionally, it has been suggested that a personality trait of individuals such as the need for achievement can influence individuals pursuing a certain goal or target.<sup>1</sup> [McClelland \(1961\)](#) defines the need for achievement as an individual’s desire for significant accomplishment, control, high standards, and to master skills. The need for achievement also refers to an individual’s preference for success under conditions of competition. Agency theory predicts that individuals with a high need for achievement are more inclined to engage in dysfunctional behaviors, as they are more motivated by self-interest (e.g., reputation, recognition, and rewards) than individuals with a low need for achievement. Prior literature identifies an entrepreneur as an individual who has the following traits: (1) a higher need for achievement than other people ([McClelland, 1961](#); [Miller, 1983](#)); (2) operates with self-interest, foresight of, and willingness to assume risk, and by opportunistic action ([Glover, Bumpus, Logan, & Ciesla, 1997](#); [Robinson, Shaver, & Wrightsman, 1991](#)). Thus, it follows that individuals with a high need for achievement are more likely than individuals with a low need for achievement to engage in opportunistic behavior. Further, studies have shown that when a system of reward or recognition is introduced, individuals with a high need for achievement tend to exert more effort to succeed than individuals

with a low need for achievement (Chong & Ferdiansah, 2012; Terpstra, Rozell, & Robinson, 1993; Turban & Keon, 1993). Turban and Keon (1993) argue that individuals with a high need for achievement are driven by their desire and need to obtain higher rewards and enhance their performance and reputation. They find that individuals with a high need for achievement prefer to work in organizations that offer them rewards as recognition for accomplishing tasks. Thus, it is expected that in a budget-setting context, managers with a high need for achievement are more likely to set easy and easily attainable budget targets to ensure that they can receive more reward and recognition for their accomplishments. A recent study by Chong and Ferdiansah (2012) suggests that individuals with a high need for achievement are more likely to misrepresent their budget to maximize this reward. They conclude that “when a budget is used as the basis for a compensation scheme, it is reasonable to assume that agents with a high need for achievement may misrepresent their budget by creating budgetary slack to obtain maximum reward” (Chong & Ferdiansah, 2012, p. 149).

In contrast, it is expected that individuals with a low need for achievement would be less concerned with achievement and recognition. Thus, it is predicted that managers with a low need for achievement are less likely to create as much budgetary slack compared to those individuals with a high need for achievement.

As noted, mutual-monitoring control can be used to mitigate subordinates’ propensity to create budgetary slack in a team-based setting. However, it is not known precisely how the personality trait of need for achievement affects subordinates’ budgetary-slack creation in the presence or absence of a mutual-monitoring control. That is, the nature of the interaction between mutual-monitoring control and need for achievement and the effect of this interaction on subordinates’ budgetary-slack creation remains unclear. This gap in the budgeting literature provides the second motivation for our study.

The remainder of the chapter is organized as follows. First, the hypotheses of this study are discussed. The research method and statistical techniques used to test the hypotheses are then discussed. Subsequently, the results of the study are examined. Finally, conclusions are drawn and we present a discussion of the limitations of the study.

## **THEORETICAL DEVELOPMENT AND HYPOTHESES FORMULATION**

### *Mutual Monitoring as a Budgetary-control Tool in a Teamwork Environment*

The first hypothesis focuses on the reliance on mutual monitoring as a budgetary-control tool that could be used to mitigate vertical agency problems in a team-based setting. It is noted that in circumstances where a superior (i.e., principal) cannot directly observe their subordinates’ (i.e., agents’) dysfunctional behaviors in multi-agent settings, subordinates can be used to observe each other (see Towry, 2003).<sup>2</sup>

The importance of a team-based environment has increased because more organizations have placed the responsibility of making decisions on groups rather than on individuals. Indeed, this claim is supported by Luft (2016, p. 81), who states that “recent decades have seen an increased emphasis on the need for MCS (management control system) to support innovation and/or creativity [...] and an increased awareness of the value of teamwork.”

Numerous empirical studies have tested various forms of MCS in a team-based setting (see e.g., Chen, Williamson, & Zhou, 2012; Hannan et al., 2013; Towry, 2003). For example, as noted by Luft (2016, p. 83):

Formal MCS can signal an overall atmosphere of trust in a variety of ways. For example, two alternative incentive compensation plans in Towry (2003), which have the same economic equilibrium, can be seen as differing with respect to the signals they send about trust within the organization. One (“horizontal”) plan uses a team incentive and leaves it up to the team to manage potential free-rider problems as they see fit, while the other (“vertical”) plan rewards employees for informing on each other to the employer. In these settings, stronger team identity (which can be encouraged or discouraged in a variety of ways by organizations) leads to more productive cooperation among team members under the horizontal incentive and more collusion against the employer under the vertical incentive.

Numerous studies have found that team-based decisions lead to dysfunctional consequences (e.g., Chong & Wan, 2014; Schopler et al., 1993). Schopler et al. (1993) argue that team members in team-based environments are also motivated by self-interest, in a similar manner to individuals in a non-team-based setting. Further, team members tend to focus on acts of self-interest more when working in a group than when working alone.

In this study, the term “mutual monitoring” refers to a condition under which coworkers, working together in a group, monitor one another’s behaviors and performance, and report the dysfunctional behaviors of their coworkers (e.g., budgetary-slack creation) to their superiors. Given that superiors may not know their subordinates’ performance capabilities, they often rely on subordinates to provide information about other coworkers who behave inappropriately or secretly build slack into the budget. Further, as Zhang (2008) notes, superiors can extract private information at a lower cost if one subordinate reveals another subordinate’s private information.

Agency theory predicts that a subordinate must hold private information if slack is to occur. Given that subordinates work together in teams, they often possess the same private information. Consequently, it is expected that subordinates are less likely to create budgetary slack if their coworkers are aware of their performance capabilities. Thus, a system of formal mutual monitoring should be an effective monitoring control tool to reduce the creation of budgetary slack when subordinates work together in the budget-setting process under a private-information condition. The rationale for this expectation is that mutual monitoring acts as a control tool by allowing subordinates whose interests are more closely aligned with their superiors to detect adverse selection (i.e., misrepresentations of skills and abilities) and moral hazards (i.e., shirking behaviors) of subordinates whose interests are less aligned with the firm (Loughry & Tosi, 2008).

In summary, the presence (or absence) of mutual monitoring is expected to lead to lower (or higher) budgetary slack under private-information conditions. The first hypothesis is stated as follows:

*H1.* Budgetary slack will be lower when mutual monitoring is present than when it is absent under a private-information condition.

*Effects of Mutual Monitoring and the Personality Trait of Need for Achievement in Slack Creation*

This chapter proposes a theory to suggest that individuals' personality trait of need for achievement is a factor that can influence subordinates' budgetary-slack creation in team-based setting. According to McClelland's (1961) theory of needs, the need for achievement is an individual's desire for significant accomplishment, control, high standards, or to master skills. According to McClelland (1961), individuals are unique in their achievement needs and can be divided into those with a low need for achievement and those with a high need for achievement. Further, when a reward system is introduced, individuals with a high need for achievement are found to exert more effort to succeed than individuals with low need for achievement because individuals with a high need for achievement perceive monetary rewards as providing valuable recognition of their performance and such a system also provides them with a means of assessing their progress and comparing their achievements to those of others. Turban and Keon (1993) find that individuals with a high need for achievement prefer to work for companies that offer rewards as recognition for the accomplishment of tasks. Further, individuals with a high need for achievement are more cautious about their reputation for success than individuals with a low need for achievement (see McClelland, 1985). This is consistent with agency-based studies that claim that individuals are generally concerned with their reputation. Given that reputation in the workplace can lead directly or indirectly to financial pay-offs such as bonuses, raises, and promotions (Baiman, 1990; Diamond, 1989), we posit that individuals with a high need for achievement (or high-need achievers) will be driven by motives of self-interest such as reputation, recognition, and receiving rewards for successful performance, and will be likely to engage in behaviors that maximize their self-interest, including the creation of budgetary slack. This is consistent with the prediction of agency theory that expects managers to make decisions that maximize their self-interest rather than their organizations' interests (Jensen & Meckling, 1976).

As discussed (see *H1*), agency-based studies (Christensen, 1982; Dunk, 1993; Pope, 1984) have shown that subordinates are more likely to build slack into their budgets to ensure that they are compensated for their efforts when permitted to do so by the conditions (i.e., if they hold private information and work under a slack-induced compensation scheme). Individuals with a high need for achievement have a strong desire or need to maintain their receipt of rewards, recognition, and reputation, and are thus motivated to act in a more self-interested manner than individuals who have a low need for achievement.

Managers who have a high need for achievement boost their self-interest (e.g., through gaining higher rewards based on budget-based compensation schemes) by intentionally setting a budget that is lower than their performance capabilities when the opportunity to do so exists, and thus create budgetary slack. Conversely, while individuals with a low need for achievement (i.e., low-need achievers) may also create budgetary slack, they will do so to a much lesser extent because they are less likely to be motivated by self-interest. Thus, it is expected that individuals with a high need for achievement are more likely to engage in dysfunctional behaviors than individuals with a low need for achievement under private-information conditions. Accordingly, a mutual-monitoring system could be used to control the dysfunctional behaviors of such a group of individuals.

This chapter posits that under a mutual-monitoring system, managers with a high need for achievement would be reluctant to engage in activities that could harm their self-interest (e.g., reputation for success). Given that a good reputation can lead to rewards and recognition, maintaining a good reputation is viewed as essential by high-need achievers. Thus, if their reputations for successfully exceeding budgets were detected by their coworkers as being created by slack, the integrity of their reputation would be jeopardized. Previous studies have found that when monitoring control tools such as variance investigation exist, individuals concerned with their reputation are unlikely to engage in behaviors that can damage their reputation (Stevens, 2002; Webb, 2002). Webb (2002) also finds that managers have a lower tendency to create budgetary slack when their budget reliability affects their reputation.<sup>3</sup> Similarly, Stevens (2002) reveals that managers are less likely to engage in behaviors that are inconsistent with social norms (e.g., honesty and fairness) and might affect their reputation when superiors have the opportunity to detect dysfunctional behaviors. When mutual monitoring is present, managers with a high need for achievement are likely to refrain from engaging in behaviors that could negatively affect their reputations because under a condition of mutual monitoring, their coworkers can detect inappropriate behavior and report the behavior to superiors. Further, Webb (2002) reveals that when reputation is affected by budget reliability, slack is constrained, provided the value of reputation exceeds any short-term benefits resulting from slack (e.g., short-term bonuses and favorable performance appraisals). Further, Baiman (1990) finds that if the future benefits of possessing a good reputation exceed the cost, managers will take actions they believe to be necessary to build or maintain that reputation. Conversely, mutual monitoring is less effective for low-need achievers because they are less concerned about maintaining their reputation.

Thus, this study predicts that mutual monitoring is more effective in mitigating the budgetary slack created by high-need achievers than it is for low-need achievers because the effect of jeopardizing reputation is greater for high-need achievers than it is for low-need achievers. Thus, if mutual monitoring is present, it is predicted that individuals with a high need for achievement will be less likely than individuals with a low need for achievement to create budgetary slack. Thus, we propose the second hypothesis:

Need for Achievement	Mutual Monitoring Absent	Mutual Monitoring Present
Low	Cell 1	Cell 2
High	Cell 3	Cell 4

Fig. 1. A Summary of the Proposed Hypothesized Relationship between Mutual Monitoring and Need for Achievement on Subordinates’ Budgetary Slack. Note: Alternative hypothesis 2 (H2): Cell 3 > Cell 4.

H2. Subordinates with a high need for achievement will create less budgetary slack when mutual monitoring is present than when it is absent under a private-information condition (see Cells 3–4 of Fig. 1).

## METHOD

### Participants

The participants in our study were 86 undergraduate students enrolled in a Bachelor of Commerce course at a large Australian university. All the subjects had taken at least two management accounting courses in which they had learned about preparing budgets and various issues related to the budget-setting process. Of the 86 subjects, 4 failed the manipulation check and were excluded from the final data analyses. The participant ages ranged from 18 to 40 years (with an average age of 21 years). Participants had an average of 16.98 months work experience in accounting courses or non-accounting courses. The sample comprised 30 males and 52 females.

### Experimental Procedures

The experimental procedures involved the three stages discussed later.

#### Stage 1: Trial Run Training Session

The objective of this stage was to establish participants’ performance capabilities and familiarize the participants with the given tasks. Participants were asked to form two-person teams and were randomly assigned to one of the two treatment conditions: mutual monitoring present and mutual monitoring absent. They were then asked to assume the role of production managers who had as one of their major responsibilities setting a budget target. The participants were then

given a booklet that contained a description of the task, a practice worksheet with examples, and a decoding key. Participants were instructed to perform a five-minute practice decoding task. The decoding task involved a simple exercise adapted from Chow (1983). This task has also been used in prior accounting studies (e.g., Drake, Wong, & Salter, 2007; Fatseas & Hirst, 1992).<sup>4</sup> The task required the participants to decode a series of letters and transform these letters into corresponding numbers based on a decoding key. Once the letters were decoded into their proper numbers, the participants were required to “solve” the codes by adding up the numbers generated from the exercise (without calculators) in under five minutes. Each participant was given a packet of codes that contained a mixture of two types of codes and the participants had the freedom to choose the codes they wished to solve.

The type “A codes” contained a set of four letters that corresponded to a two-digit number. Adding up four two-digit numbers solved this type of code. The type “Z codes” were far more difficult to solve because they involved a set of five letters corresponding to a four-digit number. Adding up the five four-digit numbers also solved this type of code. For each correctly solved code, participants received reward points.<sup>5</sup> The reward points were then used as the basis on which the participants set their budget targets. Participants who solved correctly the type “Z code” received twice as many reward points as the participants who correctly solved the type “A codes.” At the end of the five-minute trial session, the participants were asked to add up their total points (and were rewarded for solving the puzzle correctly). The total reward points reflected the participants’ level of performance capability. They were then asked to provide their best estimate of the number of reward points they would expect to achieve if they were to repeat the same tasks during the work session (i.e., during Stage 3).

### *Stage 2: Employees Pay Scheme and Treatment Conditions*

In Stage 2, hypothetical employee pay schemes and a case study were presented, together with the manipulation-check questionnaires. The participants also completed a measurement scale designed to capture their need for achievement.

The employees pay scheme was as follows:<sup>6</sup>

$$\begin{aligned} P &= F && \text{if } X \leq B \\ &= F + A(X - B) && \text{if } X > B \end{aligned} \quad (1)$$

where  $P$  = compensation;  $F$  = fixed compensation;  $A$  = subordinate compensation per reward point over budget;  $X$  = actual reward point;  $B$  = budget;  $F$  = \$ 5; and  $A$  = \$ 2.

Equation (1) demonstrates a budget-based incentive compensation and includes a fixed-salary component and piece-rate (bonus) component for reward points ( $X$ ) achieved in excess of the budget ( $B$ ). This pay scheme provided an incentive for subordinates to create slack in their budgets.<sup>7</sup>

Participants were first required to state their individual budget targets (i.e., the number of reward points they budgeted they would achieve based on the