



The interaction between motivational disposition and participative budgeting

Evidence from a bank

Motivational
disposition

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Abstract

Purpose – The purpose of this paper is to report the findings of a study of how dispositional factors of motivation rooted in personality interact with participative budgeting to affect budget goal commitment.

Design/methodology/approach – The study is based on a survey among bank managers from a Scandinavian regional bank. To assess the motivational disposition of the bank managers, the short version of the multi-motive grid test (MMG-S) is used. The management accounting variables are measured by traditional and well-tested instruments.

Findings – The results indicate that the effect of increased budgetary participation on budget goal commitment is largest for subordinates with a high need for power or a low need for affiliation. For subordinates with a low need for power or a high need for affiliation the effect of budgetary participation is small.

Research limitations/implications – The study confirms that the interaction between personal-level psychological variables, e.g. motives, and situational variables, e.g. budget participation, determine action, e.g. budget commitment. Taking personal-level variables into consideration in research on management accounting systems are thus important in studies which include individual level factors.

Practical implications – The practical implications are that a general management concept, as budget participation, should be applied with knowledge of how situational factors will interact with the personal characteristics of the involved employees.

Originality/value – Most management accounting research that uses psychological theory, focuses on the effects of management accounting on the minds and behaviour of individuals and not on the effect of individual's minds on management accounting as this paper does. The paper is the first to use the MMG-S in a management accounting study.

Keywords Budgetary control, Motivation (psychology), Individual behaviour, Personality, Banks

Paper type Research paper

1. Introduction

Psychological theory can be used to explain both the causes and the effects of management accounting practices. As noted by Birnberg *et al.* (2007, p. 115), most management

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accounting research that uses psychological theory focuses on the effects of management accounting on the minds and behaviour of individuals and not on the effect of individual's minds on management accounting. In budgeting research, important questions are, for instance, how budgeting affects individuals' motivation and organizational performance (Covaleski *et al.*, 2007, p. 590). In this article, however, we study how motives, i.e. dispositional factors of motivation rooted in the personality interact with participative budgeting to affect budget goal commitment.

Contextual or situational factors are much studied, e.g. from a contingency perspective (Chenhall, 2007), but personal characteristics like personality traits (Taggar and Parkinson, 2007) are less commonly taken into consideration in management accounting research. Further, motives are with some notable exceptions (Alam and Mia, 2006; Subramaniam *et al.*, 2002) not part of the explanations of behaviour in relation to accounting systems. We suggest in this article that the interaction between personal characteristics and situational variables should be given more attention in management accounting research. Specifically, we argue that results from motivation psychology, which seeks to explain the direction, persistence and intensity of goal-directed behaviour, should be taken into consideration.

Striving to achieve a budget target, for example, is a matter of goal engagement and disengagement which is fundamentally determined by the interaction between contextual and individual factors, including motivational disposition (Heckhausen and Heckhausen, 2008b; Murray, 1938). Thus, "motivation" is related to action in a more complex way than just being the outcome of a process. Because situational behaviour may be aroused by completely different motives or goal states (Langens and Schmalt, 2008), we suggest in this paper that taking differences in motives into consideration may explain variation in, e.g. budget goal commitment and effects of participative budgeting in general. Thus, we follow Shields and Shields (1998) who argue that a more comprehensive model of management accounting should include the reasons why participative budgeting exists and not only the consequences.

In the paper, we focus specifically on the effect of individual motive disposition on budget goal commitment in interaction with participative budgeting. Goal commitment has been chosen as dependent variable as this has been shown to be related to performance (Klein *et al.*, 1999). While traits as primary explanatory factor seem to be favoured by personality psychologists (Boyle *et al.*, 2008), motivation psychologists prefer, as noted by Fiske (2008) as well as Engeser and Langens (2010), motives as a predisposition to behave in a directed fashion as the primary explanatory concept. We draw in the paper on theory regarding participative budgeting and combine this with motivation psychology theory regarding McClelland (1961) "big three of motivation": achievement, power and affiliation (Heckhausen and Heckhausen, 2008a; Langens and Schmalt, 2008; McClelland, 1961).

In the empirical part of the paper, we have used two separate survey instruments distributed separately among the same branch managers in a Scandinavian retail bank. The first survey instrument assesses the motivational disposition of the managers using a semi-projective technique developed by Sokolowski *et al.* (2000). The other instrument is concerned with the management accounting practice and includes measures of budget participation (Milani, 1975) and budget goal commitment (Chong and Chong, 2002; Hollenbeck *et al.*, 1989).

The paper contributes to the participative budgeting literature by examining how participative budgeting interacts with the motivational disposition to affect budget goal commitment. Participative budgeting research, based on interaction effects, has shown ambiguous results (Covaleski *et al.*, 2007, pp. 605-6). In our study, we hypothesize and find that participative budgeting is positively related to budget goal commitment and we find that this relationship is positively moderated by the involved manager's level of power motivation. Thus, the effect of giving the subordinate manager influence in the budget process is largest when he/she is motivated by having influence, i.e. more power motivated. On the other hand, the effect of budgetary participation on budget goal commitment is small when the subordinate manager has a low need for power.

The remainder of the paper is structured in the following way: the literature on participative budgeting and motives is reviewed in Section 2, and based on this the hypotheses are developed. In Section 3, the research methodology is described and the results are presented in Section 4. Finally, the results are discussed and conclusions are presented in Section 5.

2. Literature review and development of hypotheses

We focus on participative budgeting as an individual-level variable (Klein *et al.*, 1994; Luft and Shields, 2007, pp. 49-53) and study specifically how the interaction between participative budgeting and motivational disposition affect budget goal commitment. The latter has been chosen as dependent variable because goal commitment is generally found to be positively related to performance (Klein *et al.*, 1999). The total model is shown in Figure 1.

It has been proposed by Macintosh (1985) and Wheeler (2001), among others, that behavioural characteristics and personality traits should be taken into consideration in accounting research. This is not only a matter of including specific characteristics as age, tenure and education (as, e.g. done by Naranjo-Gill *et al.* (2009)) in the explanation, but includes also less manifest characteristics as cognitive style drawing on the innovation and creativity literature (Emsley *et al.*, 2006) and personality (Taggar and Parkinson, 2007).

2.1 Motives and motivation profile

We focus in the paper on motivational disposition where achievement is the most thoroughly studied motive, often in combination with power and affiliation (Brunstein and Heckhausen, 2008; Smith, 1992). These three motivational dispositions form the basis of much research and are favoured by motivational psychologists because they explain the “why” of behaviour rather than just explaining “how” people act

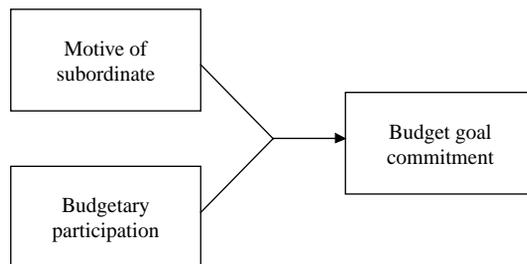


Figure 1.
The model

(Langens and Schmalt, 2008). In the following, we will use the notion of a motivation profile for an individual's score across the three dimensions.

The three core motivational dispositions considered in this paper are usually expressed as needs: need for achievement (nAch), need for power (nPow) and need for affiliation (nAff). Among the three, nAch has gained the most attention in research and was also the main focus of McClelland (1961) as well as a number of other researchers (Heckhausen *et al.*, 1985; Heckhausen and Heckhausen, 2008a; Schmalt, 1976). Following Murray (1938, p. 164), nAch is defined as the "desire or tendency to do things as rapidly and/or as well as possible" and "to overcome obstacles and attain high standards. To excel one's self. To rival and surpass others."

According to Brunstein and Heckhausen (2008, p. 137), it is a necessary condition that this drive to performance emanates from within oneself, i.e. when individuals feel committed to a standard of excellence and pursue achievement goals on their own initiatives. This does, however, not necessarily mean that self set goals *per se* should arouse achievement motivation to a higher extent than goals imposed by others (Latham, 2007, p. 111). However, individuals high on nAch are likely to be more committed to goals of medium difficulty which offer immediate feedback (Heckhausen *et al.*, 1985; Langens and Schmalt, 2008).

The affiliation motive is aroused by the need of being liked and being affiliated to others. More specifically, nAff is defined as the concern about "establishing, maintaining, or restoring a positive affective relationship with another person(s)" (Atkinson *et al.*, 1954, p. 406). The third motivational dimension, power, is characterised as "the ability or capacity of [a person] to produce (consciously or unconsciously) intended effects on the behaviour or emotions of another person" (Winter, 1973, p. 5).

In motivation theory two aspects, approach and avoidance tendencies of the specific motives, are a basic psychological distinction that is applicable to all forms of goals (Elliot and Covington, 2001; Elliot and Trash, 2002, p. 804; Trash and Hurst, 2008). Approach tendencies are characterized by a desire to move towards or maintain a positively valenced objective while avoidance tendencies are characterized by the desire to move or stay away from a negatively valenced object (Elliot and Fryer, 2008, p. 235). Approach and avoidance tendencies are also labelled as hope and fear and, traditionally, motives are measured with respect to both their hope and fear component.

Accordingly, the achievement motive can be divided into an approach tendency called "hope of success" (HS) and an avoidance tendency called "fear of failure" (FF). Similarly, the power motive can be divided into "hope of power" (HP) and "fear of power" (FP) and the affiliation motive can be divided into "hope of affiliation" (HA) and "fear of rejection" (FR). Generally, the hope and fear components are only weakly correlated or even as is the case with FF and HS negatively correlated (Trash and Hurst, 2008), thus indicating that they are independent dimensions rather than opposite ends on a continuum.

It is important to note that studying motives may result in completely different explanations than studying traits or leadership styles. Rephrasing the example suggested by Langens and Schmalt (2008, pp. 523-4), the implications in relation to budget commitment can be illustrated by considering an employee who works hard with long hours of overtime struggling to beat budget targets. Trait theories like the five-factor model (Digman, 1990) might, as suggested by Langens and Schmalt (2008), characterize the employee as highly conscientious. From a motivational perspective, the employee could be driven by an achievement motive aroused by exceeding standards.

But the hard work might also be motivated by an affiliation motive if, for instance, a high level of performance helps in maintaining and restoring important interpersonal relationships, e.g. with the superior or with co-workers. Finally, the behaviour may also be due to a strong power motive because employees with high performance receive attention from both superiors and colleagues.

As illustrated by the example, situational behaviour may serve completely different goals. Taking differences in motive disposition into consideration may explain differences in direction, persistence and intensity of goal-directed behaviour because organizational action is generally determined by the interaction between contextual and individual factors (Heckhausen and Heckhausen, 2008b; Murray, 1938).

2.2 Participative budgeting

Participative budgeting has been defined as “the process in which a manager is involved with and has influence on the determination of his or her budget” (Shields and Shields, 1998, p. 49). Already, Argyris (1953) pointed to increased participation as a way to gain acceptance of budgets but according to Shields and Shields (1998), it gained interest as an empirical research theme in the 1970s, and by now participative budgeting is one of the budget-related topics that within the past 40 years has received most attention in management accounting research; Covaleski *et al.*, 2007; Derfuss, 2009.

When it comes to research on the effect of participative budgeting on motivational related outcomes the results are mixed. Some studies found a positive effect of participation on motivation related outcomes (Brownell, 1983; Merchant, 1981; Kenis, 1979) while others found no relationship (Mia, 1989; Brownell and McInnes, 1986). Hollenbeck *et al.* (1989) found no direct relationship between goal origin (self-set or assigned) and goal commitment, but found that goal commitment had a positive effect on personal performance.

On the other hand, Chong and Chong (2002) found that budget participation is positively associated with greater budget goal commitment, and they found that budget goal commitment affects performance (with job-relevant information as mediating variable). Further, Tiller (1983) found indications of participative budgeting increasing budget commitment when the participants perceived that they had freedom in deciding a difficult budget target. In general, it is worth noticing that the effects of participative budgeting seem to be small (Shields and Shields, 1998, p. 65). Although this is not the main focus of our study, we expect that participative budgeting will be positively associated with budget goal commitment:

- H1.* There is a positive relationship between a manager’s budgetary participation and budget goal commitment.

2.3 Motivation profile and budget goal commitment

Although our primary interest in this study is on how the interaction between motivation profile and budget participation affect budget goal commitment, we do not rule out that the individual manager’s motivation profile has a direct effect on his budget goal commitment. In a psychological study, Hollenbeck *et al.* (1989) tested this relationship between the need for achievement (nAch) motive together with goal origin and their combined effect on goal commitment. These authors found that high nAch was positively associated with goal commitment. Also Subramaniam *et al.* (2002) and Steers (1977) found a direct relationship between nAch and organizational

commitment and we thus propose that nAch is also positively related to budget goal commitment:

H2a. There is a positive relationship between a manager's budget goal commitment and a manager's nAch.

Need for achievement is the only of the three motives that has been proposed as an antecedent of goal commitment in the motivation literature (Klein *et al.*, 1999; Locke *et al.*, 1988). We will, however, also consider the possibility that the affiliation and the power motive might be antecedents of goal commitment. Thus, we propose the following hypothesis:

H2b. There is a relationship between a manager's budget goal commitment and a manager's nPow or nAff.

2.4 The interaction between motivation profile and budget participation

Participation in goal-setting tends to increase goal difficulty (Latham *et al.*, 1978; Latham, 2007, p. 110) and increase confidence that goals can be attained (Locke *et al.*, 1997; Latham, 2007, p. 116), as it provides managers with an opportunity to exchange relevant information (Magner *et al.*, 1996). Therefore, participation helps managers set goals that are realistic and congruent with their abilities. Since the achievement motive is most related to performance if individuals encounter a challenging task, but is free to choose task difficulty (Langens and Schmalt, 2008, p. 256), we expect that budgetary participation in relation to goal setting will make individuals with a high nAch more committed to budget goals.

Interpreted in a budgeting context, the concept of goal origin (self-set vs assigned goals) used by Hollenbeck *et al.* (1989) is similar to the notion of participation in budgeting. Even though Hollenbeck *et al.* (1989) in general found no effect of goal origin on goal commitment, they found a positive interaction effect between goal origin and need for achievement. A subgroup of individuals with a high need for achievement had higher goal commitment with self-set goals than with assigned goals. The study by Hollenbeck *et al.* (1989) could be seen as an indication of participative budgeting being especially effective in obtaining high goal commitment for individuals with a high need for achievement. Even though Hollenbeck *et al.* (1989) is not framed in a management accounting context, we propose that we will find the same effect in a budget setting.

Concerning need for power, we propose that giving an individual influence on her budget will have a larger effect on budget goal commitment when the individual is motivated by influence, i.e. power motivated. When it comes to need for affiliation, we do not find suggestions in the motivation literature of this motive interacting with participation to enhance goal commitment. This leads to the following hypothesis:

H3. The relationship between budgetary participation and budget goal commitment will be more positive when the manager's nAch or nPow increases while the relationship between budgetary participation and budget goal commitment is not affected by the manager's nAff.

3. Methodology

To test the hypotheses, a regional Scandinavian bank was selected as research site. All managers in the branch network with budget responsibility were selected as sample.

This includes area managers, branch managers and within the branches also private client managers, business client managers, agricultural client managers and investment client managers. We did not include the executive directors or managers at staff positions.

First, a test instrument measuring motivation profile was administered among managers at a meeting for all managers in the bank. Two weeks later, a questionnaire about the budgeting process of the bank was sent out. Before being used, the instruments were tested on academic colleagues to avoid possible misunderstandings when the items were translated into the Scandinavian language. About 150 pairs of questionnaires were administered with one follow-up round. A total of 92 respondents returned both a usable test of motivation profile and a usable budget questionnaire, giving a combined response rate of 61.3 per cent. Furthermore, three respondents returned partly usable tests and questionnaires. These respondents were also included, giving a slightly different response rate for some of the questions.

Test of non-response bias was conducted by comparing the answers of early respondents with late respondents where early respondents were defined as first round respondents and late respondents were defined as second round respondents. The background for this method is that it is assumed that respondents in the second round have responded because of the stimulus created by the follow-up letter and they are therefore likely to resemble non-respondents (Armstrong and Overton, 1977). The test shows no sign of non-response bias concerning motivation profile, age, gender or seniority. When it comes to the budgeting variables, however, there are signs of early respondents participating more in the budgeting process and being more goal committed.

3.1 Measurement of budget participation

As pointed out by both Shields and Shields (1998, p. 66) and Chenhall (2007), budget participation has almost universally been conceptualised and measured following Milani (1975) as his six-item instrument consistently shows high internal reliability. This measure was also used by, e.g. Brownell (1982), Brownell and McInnes (1986), Mia (1989) and Harrison (1992); and Leach-Lopez *et al.* (2007, p. 112) report that most studies find a reliability measured by Cronbach's α in the range 0.71 to 0.91.

We follow this tradition and measure participation using a seven-point Likert-scale with 1 representing low-budget participation and 7 representing the highest participation. Responses are aggregated and the average score forms the measure of participation for each respondent. In our sample, the measure of participative budgeting has, as shown in Table I, a Cronbach's α of 0.82.

	Theoretical range	Actual range	Mean	SD	Cronbach' alpha
Hope of success	0-12	1-12	9.94	2.19	0.77
Fear of failure	0-12	0-12	3.65	2.63	0.74
Hope of power	0-12	0-12	8.46	2.92	0.80
Fear of power	0-12	0-10	1.65	1.99	0.73
Hope of affiliation	0-12	3-12	9.24	2.19	0.70
Fear of rejection	0-12	0-8	2.07	2.17	0.72
Budget participation	1-7	2.5-7	5.21	0.93	0.82
Budget goal commitment	1-7	3.5-7	5.83	0.81	0.70
Managerial level	1-3	1-3	1.94	0.81	–
Age	–	28-61	44.85	7.82	–

Table I.
Descriptive statistics

3.2 Measurement of budget goal commitment

Goal commitment is measured through the seven items originally developed by Hollenbeck *et al.* (1989), but adjusted by Chong and Chong (2002) to a budgeting context. This measure reflects the view of goal commitment as an attitude and the maintenance of that determination (Wright *et al.*, 1994; Chong and Chong, 2002). According to Klein *et al.* (1999), this measure is the most commonly used measure of goal commitment in the general goal commitment literature.

The respondents were asked to state their agreement on a seven-point Likert-scale with the seven statements expressing budget goal commitment. One item was deleted from the initial measurement instrument due to lack of item reliability and low standardised loadings. The Cronbach's α for the final six-item instrument was 0.70 (Table I).

3.3 Measurement of motivation profile

The contemporary concept of needs or motives is generally traced to the writings of Henry Murray who in his landmark publication *Explorations in Personality* (Murray, 1938) offered a theory and a catalogue of human needs (Trash and Hurst, 2008; Scheffer and Heckhausen, 2008). Murray (1938) argued that motives may be conscious or unconscious, and that unconscious motives may be reported inaccurately when self-reporting questionnaires are used. Accordingly, Murray applied the thematic apperception test (TAT) involving asking participants to tell stories about each of a set of pictures.

Murray's tradition was followed by David McClelland and colleagues (McClelland *et al.*, 1953, 1958) who developed a scoring system for the achievement motive. Similar scoring systems were later developed for affiliation (Heyns *et al.*, 1958) and power (Veroff, 1958; Winter, 1973, 1992). The basic principle in these so-called projective tests is that respondents write a story based on the pictures while researchers analyse, code and score according to the scoring system.

Another approach to measurement of motives has been to use self-report measures based on questionnaires where the respondents are asked about motives and preferences in specific situations. See Mayer *et al.* (2007) for a comprehensive overview of various motivation measures. Studies employing both types of measurement have shown that the two methods often intercorrelate only weakly (Bilsky and Schwartz, 2008; McClelland *et al.*, 1989; Sokolowski *et al.*, 2000; Lawrence and Jordan, 2009; Kehr, 2004). This indicates that the methods measure different aspects of motivation, and it is common to distinguish between implicit motivational systems or needs as measured by the projective methods and explicit motivational systems as measured by the self-attributing methods (Michalak *et al.*, 2006; Bilsky and Schwartz, 2008; McClelland *et al.*, 1989; Trash and Hurst, 2008).

In our study, the grid technique developed by Schmalt (1976, 1999, 2005, 2006) was used in a version extended by Sokolowski *et al.* (2000) in order to measure the approach and avoidance tendencies of nAch, nAff and nPow. This multi-motive grid (MMG) test has not been used in accounting research previously, but applications in personality research and related areas, e.g. Gable (2006), Lawrence and Jordan (2009), Puca *et al.* (2006), Michalak *et al.* (2006), Thirpathi and Cervone (2008) and Kehr (2004) have corroborated the validity of the MMG.

We used the short version of this multi-motive grid test (MMG-S) where 12 statements and 14 pictures of different situations were included. Each statement appears in only six of the situations, resulting in a $6 \times 12 = 72$ test item format. Using this test,

respondents are asked to put themselves in the situation of one of the persons in the picture, imaging what is going on and what that person is feeling and thinking. Next, participants are asked to decide for each of the statements (yes/no) if the statement fits the situation. The score of the motives is calculated as the sum of the motive relevant statements answered with "yes". Although the hope and fear components of a motive are generally independent of each other, we follow the tradition of Atkinson (1957, p. 361; 1964, p. 246) and calculate also a total score of each motive by summation of the hope and fear elements as was also done by Puca and Schmalt (2001) and Puca (2005).

The MMG-S has the advantage of being easier to administer for the researcher as well as easier to fill out for the respondent than, e.g. the TAT and the measure has been documented to have satisfactory psychometric properties, i.e. reliability and validity (Michalak *et al.*, 2006, p. 85; Langens and Schmalt, 2008; Sokolowski *et al.*, 2000). The reliability of the measure in our study shows a Cronbach's α ranging from 0.70 (HA) to 0.80 (HP) which is in line with the expectation as Langens and Schmalt (2008) report internal consistence of the measures from 0.65 to 0.80.

The descriptive statistics of the used measures can be seen in Table I.

4. The results

The hypotheses are tested by the use of a multiple linear regression. Steers (1977) has shown that, apart from personal characteristics, also job characteristics and work experience are antecedents of organizational commitment, therefore we have chosen to include these as control variables. As all the respondents are bank managers, we have chosen their management level and their age as measures of job characteristics and work experience. Consequently, the following regression was used:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_1X_2 + b_8X_1X_3 + b_9X_1X_4 + e$$

where Y is budget goal commitment, X_1 is budget participation (mean centered), X_2 is nAch score (mean centered), X_3 is nPow score (mean centered), X_4 is nAff score (mean centered), X_5 is age, X_6 is managerial level, $X_1 X_2$ is the interaction term between budget participation and nAch, $X_1 X_3$ is the interaction term between budget participation and nPow and $X_1 X_4$ is the interaction term between budget participation and nAff and, finally, e is the error term.

Only the interaction terms concerning budget participation and the motivation scores are included as these are based on the theoretical assumption of a person-situation interaction causing the budget goal commitment. Following the argumentation by Hartmann and Moers (1999), we have not included the other possible interaction terms as we have no theoretical foundation for these. The variables included in the interaction terms are all centred round their means to allow for interpretation of lower order effects. Pearson correlations of the variables can be seen in Table II. As there are significant correlations between some of the independent variables, collinearity statistics have been included in Table III. These indicate no problems of multicollinearity.

The results of the regression are shown in Table III. When inspecting the main effects, it can be seen that budgetary participation is positively related to budget goal commitment ($p < 0.001$). It can also be seen that the regression coefficients for the main effect of need for achievement and need for affiliation are insignificant. Furthermore, a significant result ($p < 0.05$) is found with regard to need for power being

negatively related to budget goal commitment. In sum, *H1* is confirmed while *H2a* is rejected. When it comes to *H2b*, it is confirmed with regards to a negative relationship between need for power and budget goal commitment ($p < 0.05$).

The results for the interaction effects in Table III indicate that the achievement motivation of the participating manager does not interact with budget participation to affect budget goal commitment. However, when it comes to need for power and need for affiliation, the interactions with budgetary participation are significant ($p < 0.05$). The results indicate that need for power positively interacts with budgetary participation to affect budget goal commitment while need for affiliation negatively moderates the participation-commitment relation. *H3* is thus only confirmed with regards to power. In Figure 2, the significant interaction effects are shown graphically. As can be seen, the effect of increased budgetary participation on budget goal commitment is small when the subordinate's need for power is low (or need for affiliation is high). When the subordinate's need for power is high (or need for affiliation is low) the effect of increasing the budgetary participation is considerably higher.

5. Discussion and conclusions

This study has focused on the person-situation interaction and investigated how motives directly or in interaction with budgetary participation are related to budget goal commitment. First of all, the results show that participative budgeting is positively

Table II.
Pearson correlations
of the variables

	1	2	Pearson correlation		5	6	7
			3	4			
1. Budget goal commitment							
2. Budget participation	0.472**						
3. Achievement	-0.191	-0.164					
4. Power	-0.142	0.092	0.337**				
5. Affiliation	-0.070	0.009	0.600**	0.468**			
6. Age	0.229*	0.312**	0.000	0.199	0.075		
7. Managerial level	-0.153	-0.044	0.109	0.030	0.065	0.134	

Note: Significance at: *0.05 and **0.01 levels (two-tailed)

Table III.
Regression results

Y = Budget goal commitment	Coefficient	B	SE	t	Sig.	Tolerance	VIF
(Constant)	a	5.366	0.452	11.880	0.000	0.000	0.000
Budget participation (Bp)	b ₁	0.360	0.083	4.320	0.000	0.839	1.192
Achievement score (nAch)	b ₂	-0.021	0.026	-0.804	0.424	0.555	1.803
Power score (nPow)	b ₃	-0.051	0.024	-2.143	0.035	0.715	1.398
Affiliation score (nAff)	b ₄	0.030	0.027	1.097	0.276	0.506	1.976
Managerial level	b ₅	-0.166	0.092	-1.800	0.076	0.898	1.114
Age	b ₆	0.018	0.010	1.796	0.076	0.824	1.214
Interaction (Bp × nAch)	b ₇	0.047	0.030	1.583	0.117	0.581	1.722
Interaction (Bp × nPow)	b ₈	0.059	0.025	2.335	0.022	0.732	1.365
Interaction (Bp × nAff)		-0.074	0.033	-2.261	0.026	0.464	2.153

Notes: $R^2 = 0.371$; Adj. $R^2 = 0.301$; $F = 5.297$; $p = 0.000$

related to budget goal commitment. Furthermore, we found indications that one of the components, need for power, being negatively related to budget goal commitment and the results indicated that the subordinate's need for power positively interacts with budgetary participation to affect budget goal commitment. Finally, we find indications of the subordinate's need for affiliation negatively moderating the relationship.

Our study supports that there is a positive relationship between participation and budget goal commitment and the practical implication of the study is therefore, that if the aim is to increase budget goal commitment then the subordinate managers should have increased influence on the budget process. The main result is, however, that budget participation interacts with motivation profile to affect budget goal commitment which implies that the effect of this increased influence is largest for subordinate managers that are motivated by having influence (i.e. high need for power) or subordinate managers that have a low need for affiliation.

Although the information on subordinates motivation profile is not generally available in an organization, the study points to the importance of recognising that it is the interaction between personal level psychological variables, e.g. motives, and situational variables, e.g. budget participation, that determine action, e.g. budget goal commitment. The practical implication is that the effectiveness of involving subordinate managers in the budgeting process and setting budget targets will not only depend on situational circumstances but also on personal characteristics of the involved. Thus, irrespectively of whether participative budgeting in general seems to influence budget goal commitment, it is not necessarily effective in relation to all subordinates.

The fact that we find no relationship between need for achievement and budget goal commitment (neither a main effect, nor an interaction effect) are in contrast to Hollenbeck *et al.* (1989) who found a positive relationship between need for achievement and goal commitment and also found an interaction effect between need for achievement and goal origin. One explanation for the different results could be that the way of measuring achievement differs between the two studies. Hollenbeck *et al.* (1989) measure achievement using a questionnaire and, therefore, measure explicit achievement motivation (McClelland *et al.*, 1989). Michalak *et al.* (2006) argue that the MMG method assesses implicit motives, but Bilsky and Schwartz (2008, p. 1739) find it arbitrary to assign a semi-projective method like the MMG to one of the categories and also Michalak *et al.* (2006, p. 93) point out that the convergent validity of MMG and TAT scores still needs further clarification.

The distinction between implicit and explicit motives could play a role for the results when budget goal commitment is the dependent variable. As suggested by McClelland *et al.* (1989, p. 695), explicit motives will to a greater extent than implicit motives be aroused by "explicit social incentives or demands". It could, thus, be the case

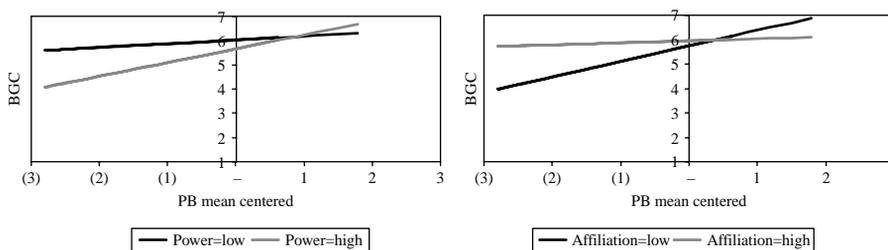


Figure 2.
Illustration of the
interaction effect

that budget goals only arouse explicit achievement motives as in Hollenbeck *et al.* (1989), but not implicit achievement motives as we have measured. Motives can, as stated by Langens and Schmalt (2008), regulate behaviour without necessarily resorting to conscious goals. Thus, our finding in combination with the findings in Hollenbeck *et al.* (1989) suggest that when focusing on explicit motives, need for achievement interacts with budgetary participation whereas need for power and need for affiliation interact with budgetary participation when focusing on more implicit motives.

In relation to research on management accounting systems the study highlights the importance of taking interactions with personal level variables into consideration when studying the effects of, e.g. participative budgeting. Most management accounting research that uses psychological theory focuses on the effects of management accounting on the minds and behaviour of individuals and not on the effect of personal characteristics on management accounting as this paper does. In budgeting research, the important question (Covaleski *et al.*, 2007, p. 590) is how budgeting affects individuals' motivation and organizational performance. What we propose is also to study how dispositional factors of motivation rooted in the personality interact with situational characteristics of the budgeting process to affect the results of the budgeting process.

In relation to our focus on motives, further research needs to investigate the connection between budget goals and both implicit and explicit motivation and how budget goals might arouse the implicit and explicit motivation differently. Likewise, further research needs to be undertaken to clarify the unexpected result in connection with *H3*, indicating that need for affiliation negatively moderates the participation-commitment relationship.

When evaluating the findings of this study, it should be taken into consideration that the findings could be affected by the characteristics of the organization and the specific budgeting practice involved in the study. Replication of the study in a different setting could therefore be valuable. This could for example be in an organization with a different tradition of commitment, but it could also be in an organization using relative performance targets, thus testing if motives are differently related to a relative target compared to a budget goal. Also, the possible response bias indicating that early respondents participate more in the budgeting process and are being more goal committed should be taken into consideration when evaluating the results.

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