

THE AFFECT OF THE RELATIONSHIP BETWEEN BUDGET PARTICIPATION AND JOB-RELEVANT INFORMATION ON MANAGERIAL PERFORMANCE

BÜTÇE KATILIMI VE İŞLE İLGİLİ BİLGİ ARASINDAKİ İLİŞKİNİN YÖNETSEL PERFORMANS ÜZERİNE ETKİSİ

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ABSTRACT

This study reports the results of the empirical study which designed to assess the relationship of budget participation and job-relevant information to managerial performance among subordinates in 150 firms. To test the proposed relationship, the survey was applied on accounting and finance managers of 150 businesses, which were among the top 500 businesses in Turkey in 2006. The results of the study consistent with the proposition that subordinates with high performance tend to use budget participation and job-relevant information greater extent than subordinates with low performance. However, the study revealed that the two-way interaction term is significant, and thus, higher interaction between budget participation and job-relevant information is associated with higher managerial performance.

Keywords: Budgetary Participation, Job-Relevant Information, Managerial Performance, Factor Analysis, Logistic Regression Analysis.

1. INTRODUCTION

Participative budget is an important concept of management accounting and the most emphasized subject by the authorities for a long time. The development of participative budget understanding is related with using the factors positively effecting the increase of performance and profit such as motivation, coordination, control and communication. In the Today's competitive manufacturing environment, participative budget come to the fore as a functional instrument.

We can talk about two basic benefits of participative budget as psychologic and cognitive. Psychologic benefit means the ability of participative budget about motivation of employees through adoption of organizational targets and identification of identity (Murray, 1990: 104-123; Chow and et al., 1988: 111; Lau and Buckland, 2001: 374). On the other hand, cognitive benefit means to provide suitable condition to development of cognitive resources for more qualitative decision-making. This is possible in two ways. First is that budget participation, make possible to include job information concerning employees' own responsibility areas into decision-making process. The second one is the capability of budget participation on presenting necessary informations (such as goal, strategy, environmental conditions, etc.) to employees during executing their duties by including them to the interaction and connection with their superiors.

The natural result here is that both cognitive and psychologic benefits of participative budget, lead to increase job-relevant performance. But, when we look at the relevant literature, we can realize that this is not reachable judgement easily, because while some studies argued that budget participation positively and significantly associated with performance (Kenis, 1979: 707-721), other studies have found either only a weak positive association between participation and performance (Milani, 1975: 282) or a negative association between two variables (Bryan and Locke, 1967: 274:277).

The fact that the relationship between participation and performance is not always a positive one, has made necessary to evaluate the relationship by taking into account different variables. National culture (Lau and Buckland, 2000: 54; Tsui, 2001: 125: 146), organizational culture (Goddard, 1997: 111; O'connor, 1995: 383-404; Subramaniam and Ashkanasy, 2001: 35-54), environmental uncertainty (Govindarajan, 1986: 496-516; Gul, 1991: 57-61; Dunk and Lysons, 1997: 11), market competition (Chong and et al., 2005: 115-133), information asymmetry (Dunk, 1993: 400-410; Chow and et al., 1988: 111-122), task characteristics (uncertainty / difficulty) (Brownell and Hirst, 1986: 241-249; Brownell and Dunk, 1991:693-703; Lau and Tan, 1998: 180; Orpen, 1991: 695-696), role ambiguity (Becker and Gren, 1962: 352-402; Chenhall and Brownell, 1988: 225-233), motivation (Cherrington and Cherrington, 1973: 225-253; Brownell and McInnes, 1986: 587; Orpen, 1991: 695-696; Lau and Tan, 1998: 163; Brownell, 1982: 12-27), locus of control (Brownell, 1981: 844-860; Brownell, 1982: 766-777), supervisory evaluative style (Brownell, 1982: 12-27; Otley, 1978: 122-149; Brownell and Hirst, 1986: 241-249; Brownell and Dunk, 1991: 693-703), job-relevant information (Kren, 1992: 511-526; Chong and, Chong, 2002:65; Chong and Johnson, 2007: 3-19; Magner, Welker and Campbell, 1996: 43; Shields and Shields, 1998: 49-76), management accounting systems (Choe, 1998: 185-198; Tsui, 2001: 125-146) and organizational commitment (Nouri and Parker, 1998: 467-483) are some of these variables.

It is possible to say that job-related information as a variable affecting the participation-performance relationship is one of the least studied subjects in the literature. So in this study, it is aimed to test a model that budget participation, affects subordinates' managerial performance by using job-relevant informations on budget-setting process in Turkey.

The remainder of this article has been organized as follows. In the next section, the theoretical model underlying the study is discussed. The following section presents the method applied, statistical results and the conclusion of this study.

2. LITERATURE and HYPOTHESES

The managerial accounting literature has identified two important roles of information in organizations: 1) providing some of necessary information for planning and decision-making and 2) motivating and monitoring individuals (Zimmerman, 1997: 5). These two roles have also been called the decision-facilitating role and the decision-influencing role (Kren, 1992: 512; Sprinkle, 2003: 288).

While using of managerial accounting information for decision-facilitating purposes is intended to improve employees' knowledge, thereby enhancing their ability to make organizationally desirable judgments and decisions and better-informed action choices, the use of managerial accounting information for decision-influencing purposes is intended to solve organizational control problems and therefore ensure that employees exhibit organizationally desirable behaviors (Sprinkle, 2003: 288). It is vital to understand both of these roles effects of managerial accounting information, because an organization's managerial accounting system plays a key role in motivating employees and improving their judgments, decisions and actions.

The fact that knowledge can more effectively perform two functions put forth by management accounting within an organization depends on the level of organizational participation. Participation offers two benefits. First, it allows subordinates to incorporate their knowledge on their specialized fields into decision-making process, which enables to make high-quality decisions (Pope, 1984: 43). Secondly, it provides subordinates with information that is needed for their own task fields through the contributions of superiors and other departments. Thus, participation is a phenomenon that positively affects the performance of both low- and high-level executives, as well as all other employees.

Participatory budget process has a significant role as a management accounting tool for the functionality of participation in firms. This process could be interpreted as a cognitive factor that increases the information of employees concerning their work and hence conduces an observable increase on performance. In this process, subordinates which could find opportunity to interact with superiors, also could clear firm's aims, working strategies,

conditions in the work environment and other factors by asking various questions and thus a participatory decision-making process could be stay alive in organizational level.

Prior studies on participatory budget - job-relevant information - performance relationship confirmed that a positive linkage exists between budget participation and job-relevant information. Kren (1992: 511-526) argued that budget participation was associated with greater job-relevant information, which, in turn, was associated with higher job performance. Chong and Chong (2002: 65) argued that the act of participation provides an opportunity for subordinates to gather, exchange, and disseminate job-relevant information to facilitate their decision-making process, which in turn improves job performance. Sheely (1999: 96) found that participation is associated with job-relevant information; however, job-relevant information is not directly associated with increased performance only indirectly through self-efficacy. Heath and Brown (2007: 111-124) argued that participation in the budgetary process is associated with positive increases in self-reported measures of job-relevant information and self-efficacy (task-specific self-confidence) which, in turn, are associated with positive increases in individual job performance.

In addition, Chong and Johnson (2007: 3-19) suggested that the cognitive effect of participation in goal-setting allows subordinates to gather, exchange and share job-relevant information. Chong and Johnson (2007: 3-19) further suggested that the availability of job-relevant information allows subordinates to develop effective strategies or plans, which will help them to exert effort over time, in an attempt to attain their goals. Magner and et al. (1996: 41-50) found that participation has a direct and positive effect on job-relevant information. Also, they argued that the act of participation allows subordinates to interact with superiors whereby subordinates can ask questions to clarify goals, task strategies, conditions in the work environment, and other issues that have an important impact on their jobs (Magner and et al., 1996: 41-50). On the other hand, Shields and Shields (1998: 49-76) suggested that the cognitive role of budgetary participation improves a subordinate's quality of decisions as a result of sharing information with the superiors.

Apart from studies examining participatory budget-job-relevant information-performance relationship, we see a few different studies on job-relevant information in the literature. A few of these studies have examined the relationship between management accounting system- job-relevant information - managerial performance. For example, Chong (2004: 1-23) argue that the use of more broad scope management accounting system information and high use of job-relevant information for decision-making leads to improve managerial performance under high task uncertainty situations. Also Sharma and et al. (2006: 228) found that tests of the moderating relationship between the control environment, broad scope management accounting system, job-relevant information, and performance revealed a significant interaction term for job-relevant information, but not for performance.

Additionally, one study examine the relationship between strategic performance measurement system- job-relevant information - role ambiguity - managerial performance. This study belongs to Burney and Widener. They found that an strategic performance measurement system positively affects performance through its relations with job-relevant information and role ambiguity (Burney and Widener, 2007: 43-70).

Also, in another different study concerning cultural effects on job-relevant information - budget participation -performance- communication, Leach-López and et al. (2007: 105-136) found that the information-communication aspect of the budget participation-performance relationship is much stronger among our Mexican managers and strongest among our Mexican managers who may face the greatest psychic distance from their U.S. parent companies: those who are not bilingual, and/or those who are supervised by U.S. nationals.

Lau and Tan add a new perspective on the subject by underlying the importance of job satisfaction. In this context, they examined the effects of participation and job-relevant information on job satisfaction. They found that budget emphasis has an insignificant direct effect on job satisfaction, but a strong indirect effect through job-relevant information and budgetary participation (Lau and Tan, 2003: 17-34). The results also indicate that job-relevant information has an intervening effect on the relationship between participation and job satisfaction (Lau and Tan, 2003: 17-34).

Based on the existing empirical studies, we suggest that budget participation enhances job-relevant information, which in turn, improves managerial performance. Stated formally, the following hypothesises are tested:

H1: There is a positive relationship between budget participation and managerial performance.

H2: There is a positive relationship between job-relevant information and managerial performance.

H3: There is a positive and significant effect of the interaction between budget participation and job-relevant information on managerial performance.

3. METHODOLOGY

3.1. The Nature of the Research and Sampling

The population of the study comprised subordinates that have been working in accounting and finance departments in the top 500 firms in Turkey in 2006. The data forms were sent to them in 01 June- 30 December 2007 by post and electronic mail. 150 forms returned and response rate was 28.3%. The activity areas of the firms are depicted in Table 1.

Table 1: Profile of Respondents According to Activity Areas

Activity Areas	Frequency	Percent	Valid Percent	Cumulative Percent
1 Textile, clothing and footwear	38	25,3	25,7	25,7
2 Food and allied products	18	12,0	12,2	37,8
3 Construction	17	11,3	11,5	49,3
4 Petroleum and chemicals	7	4,7	4,7	54,1
5 Plastic products	8	5,3	5,4	59,5
6 Metal Wares	7	4,7	4,7	64,2
7 Machinery	12	8,0	8,1	72,3
8 Wood and paper products	8	5,3	5,4	77,7
9 Automotive and spare part	21	14,0	14,2	91,9
10 Electronic products	10	6,7	6,8	98,6
11 Others	2	1,3	1,4	100,0
Total	148	98,7	100,0	
Missing	2	1,3		
Total	150	100,0		

As seen from the table, activity distribution was realised in the following order, 25.7% textile, clothing and footwear, 14.2% automotive and spare parts, 12.2% food and allied products and 11.5% construction.

3.2. Data Collection Tools

The survey form, which was developed to collect research data, was comprised of three parts. In the first part, budget participation was evaluated by a six item, five-point Likert-type scale developed by Milani (1975: 274-285). All respondents were asked to indicate extent of their influence and involvement in setting the budget by circling a number from 1 to 5 on the scale for each of the items. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.898. A factor analysis of the six items was subjected to principal component analysis and “none” as rotation technique. At the end of the analysis, one factor has been determined to have eigenvalue above 1. This factor explained 65.225 % of the total variance. The results of the factor analysis are shown in Table 2. The use of the measure yielded a Cronbach alpha coefficient of 0.892, which indicates very high internal reliability for the scale. An overall measure of budget participation was constructed by averaging the responses of the six individual items.

Table 2: Factor Analysis of Budget Participation (BP) Scale

Item No.	Questions	Factor Loading
1.	Which category below describes your extent of involvement when the budget is being set? 1(all of budget) 5 (none of budget)	,811
2.	Which category below describes the reasoning provided by your superior for budget revisions? The reasoning is 1(very logical) 5(very illogical)	,596
3.	How often do you state your opinions and suggestions about the budget to your superior without being asked? 1(very frequently) 5(never)	,787
4.	How much influence do you think you have on the final budget? 1(very high amount) 5(none)	,880
5.	How do you view your contribution to the budget? 1(very important) 5 (very unimportant)	,865
6.	How often does your superior ask your opinions and suggestions when the budget is being set? 1(very frequently) 5(never)	,871

In the second part, job-relevant information was measured by a three item, five-point Likert-type scale developed by Kren (1992: 511-526). All respondents were asked to mark a number from 1 (strongly disagree) to 5 (strongly agree). The KMO measure of sampling adequacy was 0.545. A factor analysis of the three items were used principal component analysis and “none” as rotation technique. At the end of the analysis, one factor has been determined to have eigenvalue above 1. This factor explained 58.632% of the total variance. The results of the factor analysis are indicated in Table 3. The use of the measure yielded a Cronbach alpha coefficient of 0.62, which indicated satisfactory internal reliability for the scale. An overall measure of job-relevant information was constructed by averaging the responses of the three individual items.

Table 3: Factor Analysis of Job-Relevant Information (JRI) Scale

Item No.	Questions	Factor Loading
1.	I am always clear about what is necessary to perform well on my job.	,473
2.	I have adequate information to make optimal decisions to accomplish my performance objectives.	,880
3.	I am able to obtain the strategic information necessary to evaluate important decision alternatives.	,873

In the last part, managerial performance was measured by a eight -item, nine point Likert-type scale developed by Mahoney et al (1965: 97-110).¹ These items are: planning, investigating, coordinating, evaluating, supervising, staffing, negotiating and representing. Participants were requested to mark a number from 1(very low) to 9 (very high) to rate their own perceived performance on

eight subdimensions of managerial performance. The KMO measure of sampling adequacy was 0.861. A factor analysis of the three items were used principal component analysis and “none” as rotation technique. At the end of the analysis, one factor has been determined to have eigenvalue above 1. This factor explained 52.679% of the total variance. The results of the factor analysis are indicated in Table 4. The use of the measure yielded a Cronbach alpha coefficient of 0.867, which indicated satisfactory internal reliability for the scale. An overall measure of managerial performance was constructed by averaging the responses of the eight individual items.

Table 4: Factor Analysis of Managerial Performance (MP) Scale

Item No.	Questions	Factor Loading
1.	Performance in Planning	,693
2.	Performance in Investigating	,765
3.	Performance in Coordinating	,765
4.	Performance in Evaluating	,763
5.	Performance in Supervising	,715
6.	Performance in Staffing	,693
7.	Performance in Negotiating	,711
8.	Performance in Representing	,698

3.3. Data Analysis

In this study, the data was entered into SPSS 13 for data analysis. Multi-correlation, logistic regression and t-test analysis were performed.

3.3.1. Descriptive Statistics and Correlation Analysis for All Variables

Table 5 presents the descriptive statistics and pearson correlation matrix for the independent and dependent variables of this study.

Table 5. Descriptive Statistics and Correlation Matrix For All Measured Variables

Variables	N	Min.	Max.	Mean	Standard Deviation	(1)	(2)	(3)
BP(1)	148	1,17	5,00	3,6552	,80101	1	,448(**)	,419(**)
JRI(2)	148	2,33	5,00	4,2635	,53169	,448(**)	1	,389(**)
MP(3)	149	4,13	9,00	7,1679	,97206	,419(**)	,389(**)	1

** Correlation is significant at the 0.01 level (2-tailed).

Budget participation is positively and significantly correlated with job-relevant information and managerial performance and the correlations were 0.448 ($p < 0.01$) and 0.419 ($p < 0.01$), respectively. Also, Table 5 displays that job-relevant information is positively and significantly associated with the managerial performance, as proposed and the correlation was 0.389 ($p < 0.01$).

3.3.2. Logistic Regression Analysis

In this section, the effects of interaction between budget participation and job-relevant information on performance level of subordinate were investigated by using a logistic regression analysis. For selecting variables in the logistic regression the stepwise forward selection method was used. In the logistic regression analysis, for determining the impact of independent variable on dependent variables, the subordinates with low managerial performance, was coded with the reference category=0 and the subordinates with high managerial performance was coded with the reference category=1.

In the logistic regression model which was constituted for determining the effect of interaction term ((budget participation- job-relevant information) predictor variable on performance levels of subordinates, Hosmer-Lemeshow statistic was 3,837, -2 log likelihood statistic (LL) was 95,749 and significant level (p) was 0,872 ($p > ,05$) with 8 degrees of freedom. The results of goodness-of-fit test which are shown in Table 6 indicated that the logistic regression model was not a good fit. The Cox and Snell R^2 was found to be 6,2% in the first step and this statistic indicated that there was an approximately 6% relationship between managerial performance and interaction term. Also, Nagelkerke R^2 indicated that there was a 12% relationship between above variables. In other words it indicated that 12% of the variation in the dependent variable was explained by interaction term in the model.

Table 6. Goodness-of-fit test of model for managerial performance

Step	-2 Log likelihood	Cox & Snell R^2	Nagelkerke R^2	Chi-square	Df	Sig.
1	95,749(a)	,062	,120	3,837	8	,872

a: Estimation terminated at iteration number 5 because parameter estimates changed by less than ,001.

Table 7 shows the results of the regression model which was constituted for determining the predictors of managerial performance. In Table 7, "B" column shows the coefficients (called Beta Coefficients) associated with each predictor, "sig." column shows the significant levels and "Exp(B)" column shows the odds ratios. The odds ratio is defined as the probability of the outcome event occurring divided by the probability of the event not occurring and the odds ratio for a predictor tells the relative amount by which the odds of the outcome increase (odds ratio greater than 1.0) or decrease (odds ratio less than 1.0)

when the value of the predictor value is increased by 1.0 units. In the model, the “B” coefficient was 0,179 for interaction term, p value was 0,004 and the model was statistically significant ($p < ,05$). The odds ratio was 1,196 and it indicated that one unit increase in interaction term increases 1,196 times the odds of increasing managerial performance.

Table 7. Results of logistic regression for managerial performance

		B	S.E.	Wald	Df	Sig.	Exp(B)	95,0% C.I. for EXP(B)	
								Lower	Upper
Step 1(a)	Interaction Term X1 X2	,179	,061	8,523	1	,004	1,196	1,061	1,349
	Constant	-,564	,857	,433	1	,510	,569		

a: Variable(s) entered on step 1: Interaction Term X1 X2.

The success of the logistic regression can be assessed by looking at the classification table. Table 8 shows correct and incorrect estimates. The columns are the two predicted values of the dependent, while the rows are the two observed (actual) values of the dependent. According to this table, the 0,0% of subordinates which have low performance, 100% of subordinates which have high performance were appointed correctly. With the analysis made the correct classification rate was found as 88,4%.

Table 8: Classification table of logistic regression for managerial performance

		Predicted		Percentage Correct
		MP		
		0	1	
Observed MP	0	0	17	,0
	1	0	129	100,0
Overall Percentage				88,4

The cut value is ,500

3.3.3. Results of t-test Analysis

In this section, we examine whether budget participation, job-relevant information and interaction term varies between low and high managerial performance. With this aim, t-test analysis were used and results of the analysis were displayed in Table 9.

Table 9: Mean (SD) and t-test For Budgetary Participation, Job-Relevant Information and Interaction Term Between High vs. Low Managerial Performance

Variables	Managers having low performance n=17 Mean(SD)	Managers having high performance n=131 Mean(SD)	t-value(p)
Budget Participation (X1)	3,1510 (.79146)	3,7206(.78158)	-2,796 (.011)
Job-Relevant Information (X2)	3,9630 (.57039)	4,3075 (.51600)	-2,428 (.024)
Interaction Term X1 X2	12,6715 (4,41448)	16,1921(4,31784)	-3,099 (.006)

According to the mean scores on budget participation, t-test indicate that subordinates with high performance have participative budget style more than subordinates with low performance. In other words, the results of the t-test refer to significant variations ($p < 0,01$, two-tailed test) between groups in terms of their budgetary participation levels. Similarly, the mean scores on job-relevant information showed that subordinates with high performance tend to use job-relevant information greater extent than subordinates with low performance. However, there were significant differences in interaction terms between the two groups statistically. In other words, t-test analysis showed that the two-way interaction term was significant, thus, suggesting that the interaction effects of budget participation and job-relevant information on managerial performance were different, depending on the low and high performance of subordinates.

4. CONCLUSIONS

The aim of this study is to examine the effect of interaction between budget participation and job-relevant information on managerial performance. To test this relationship, the study surveyed 150 manufacturing and service firms take part in top 500 firms in Turkey. For the aim of the study, the questionnaire, which was comprised of three parts (budget participation, job-relevant information and managerial performance scales), was used and sent to 500 subordinates who have been working in accounting and finance departments by post and electronic mail. 150 subordinates responded the questionnaire. The response rate was 28.3%. In the analysis of data, factor analysis, descriptive statistic (mean and standard deviation), correlation analysis, logistic regression analysis and t-test analysis were used.

First, in the factor analysis, principal component analysis and “none” as rotation technique were used. With regards to budget participation, job-relevant information and managerial performance, factor analyses determined the single factor structure of scales with an eigenvalue greater than 1 explaining 65.225 %, 58.632% and 52.679% of the the total variance, respectively. The cronbach alpha reliability coefficients of these factors were 0.892, 0.62 and 0.867.

Second, the correlation analysis is used to test relationship among variables. The results of this analysis show that managerial performance is positively and significantly correlated with budget participation and job-relevant information and the correlations were 0.419 ($p < 0.01$) and 0.389 ($p < 0.01$), respectively.

Third, the logistic regression analysis is applied to test the effect of interaction between budget participation and job-relevant information on subordinates' performance. The results of this analysis supported the proposition about being an important variable of joint effect of budget participation and job-relevant information on subordinates' performance. Accordingly, logistic regression analysis' results display that one unit increase in interaction term increases 1,196 times the odds of increasing managerial performance. In other words, the study put forward that high interaction score between budget participation and job-relevant information lead to high managerial performance score.

Fourth, the effects of the independent variables on low and high managerial performance individually are explained by t-test analysis. The results of this analysis show that subordinates with high performance tend to have budget participation level more than subordinates with low performance. However, our results indicate that while high job-relevant information acquisition and use of subordinates in firm can lead to increase in their performance, low job-relevant information acquisition and use of subordinates can lead to decreasing in their performance. Similarly, our results support the hypothesis that interaction score between budget participation and job-relevant information varies according to low and high managerial performance. As to this, while high interaction between budget participation and job-relevant information is associated with high managerial performance, low interaction score between budget participation and job-relevant information is associated with low managerial performance. That is to say, budget participation is facilitated acquisition and use of job-relevant information, which in turn lead to improved managerial performance.

Several limitations may be noted in this study. First, the sample was composed of only accounting and finance managers of top 500 firms in Turkey. Therefore, more comprehensive sample may be useful for future studies. Also, this study is used budget participation and job-relevant information as factors affecting managerial performance. Future researches may include variables such as environmental uncertainty, market competition, task characteristics (uncertainty/difficulty), organizational structure, culture, job satisfaction. Also, future researches may be tested the these variables affecting managerial performance using different research methods. Future research may be designed to compare the findings in this study with findings that relate to companies in other countries.

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