

ENVIRONMENTAL UNCERTAINTY AND BUDGETARY EVALUATION: CASE OF MOROCCAN FIRMS

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Abstract

Using data from 62 firms based in Morocco, this research reports the findings of a study designed to examine the relationship between budgetary evaluation and environmental uncertainty. In this research, we identified three principal styles of budgetary evaluation: "strict budgetary evaluation" adopted by 21% of the sample; "moderate budgetary evaluation" adopted by 27.4% of enterprises surveyed and "lower budgetary evaluation" adopted by 51.6% of the sample. The environmental uncertainty has no significant effect on the budgetary evaluation.

Keywords: Budgetary evaluation - Contingency approach - Environmental uncertainty.

INTRODUCTION

No doubt, the budgetary control is a central tool of management control (Jordan, 1998; Van der Stede, 2003). Ansari (1979, p. 153) underlines that "the central notion underlying budgetary control systems is that of responsibility accounting". This implies especially a budgetary evaluation.

Since the second half of the twentieth century, several studies have been conducted to understand the impact of the budgetary evaluation on the firms' performance. However, the explanation of its variety is less studied (Hartmann, 2000). These works were done in the developed countries, especially in the Anglo-Saxon World. However, this type of research is still absent in the Arab countries such as Morocco for example.

This article aims to present the main results of an empirical study done in Morocco and attempts to highlight:

- the diversity of the budgetary evaluation practices; and
- the impact of the environmental uncertainty on the budgetary evaluation.

A literature review and a presentation of our choices of research methodology are necessary to conduct the statistical analysis and to present the main results.

1. REVIEW OF LITERATURE AND FORMULATION OF HYPOTHESES

1.1. Budgetary evaluation and its diversity

Budgetary evaluation or Reliance on Accounting Performance Measures (RAPM) is an important area of management accounting research, which seeks to investigate the effects of the use of accounting data for evaluating managerial performance. Harrison (1993: 319), considers RAPM to be "...the extent to which superiors rely on, and emphasize those performance criteria which are quantified in accounting and financial terms, and which are pre-specified as budget targets".

This budgetary practice was studied by a several researchers, especially in the Anglo-Saxon world. Hopwood (1972) developed three styles of evaluation performance which make distinctly different use of the accounting data:

- Budget Constrained style (BC) in which the manager's performance is evaluated on the basis of his ability to achieve the short-term budget;
- Profit Conscious style (PC) in which the budgetary and accounting data are used in a careful and flexible manner in the individual performance evaluation, often supplemented with other information; and
- Non Accounting style (NA) in which the budgetary information plays a secondary role in the evaluation of managerial performance.

In this context, we must answer the following question: the environmental uncertainty has an impact on the diversity of practices relating to the budgetary evaluation?

1.2. Impact of environment uncertainty on budgetary evaluation

To explain the diversity of the budgetary evaluation systems by the environment uncertainty, it seems necessary to use the contingency theory. The basic principle of the contingency theory is clearly mentioned by Scott (1992: 89): "the best way to organize depends on the nature of the environment to which the organization relates". Contingency theory has two basic underlying assumptions:

- there is no one best way to organize: this approach arose from its opposition to the "one best way" related of traditional management theories (Scott, 2003); and
- any way of organizing is not equally effective (Galbraith, 1973).

During the last four decades, the management control systems literature has been dominated by the contingency paradigm. Fisher (1995: 32) demonstrates that "... the contingent control literature is based on the premise that a correct match between contingent factors and a firm's control package will result in desired outcomes". The environmental uncertainty is the earliest variables examined in the contingency research of the 1960s (Burns & Stalker, 1961; Lawrence & Lorsch, 1967; etc.). In management control, this contingency factor is presented as a powerful explanatory variable of its diversity (Chapman, 1997; Hartmann, 2000). The uncertainty is "a change of the conditions of the environment which affects the controlled process. It makes the forecasts difficult and the fixing of budgetary targets awkward" (Sponem, 2006:5).

The effect of this variable on the budgetary evaluation is unclear, empirical RAPM studies generated conflicting results. Hartmann (2000: 472) demonstrates "the uncertainty paradox". Three categories of results can be found. In the first group, several studies have not obtained a significant relationship between the two variables. This result is obtained by Ross (1995); Soobaroyen (2007); etc. in the Second group, Hirst (1981), Merchant (1984) and Govindarajan (1984) highlight that the RAPM is not used in situations of the environmental uncertainty (negative correlation), and in the third group, Simons (1987) and Ezzamel (1990) show that RAPM must be used specifically in cases of the environmental uncertainty (positive correlation).

In front of these findings on the uncertainty paradox, one is compelled to argue that a high level of environmental uncertainty would not match with a system of evaluation based on accounting or budget performance and this is confirmed by Chenhall (2003). The main argument relates to the inappropriate focus of RAPM on outcomes as opposed to being associated to the level of complexity inherent in high environmental uncertainty situations. Merchant (1990) shows also that RAPM can have a negative consequences on the functioning of the organization in an uncertain environment. In this context, the controllability principle is not respected. The following hypothesis is proposed.

Hypothesis of the research: there is a significant negative relationship between environmental uncertainty and budgetary evaluation.

2. METHODOLOGY

2.1. Sample

The study was based on data collected using questionnaires sent to enterprises based in morocco. Of 412 questionnaires sent out, a total of 76 questionnaires were returned. However, 14 of these were

returned either completely unanswered or partly answered, making a response rate of 15%. The questionnaires were completed by 18 CFOs (29%), 23 management controllers (37%), 17 accountants (27%) and 4 other managers (6%).

The sample consists of 48 industrial enterprises (77%), 6 firms of building and public works (10%), 6 enterprises of services (10%) and 2 commercial enterprises (3%). Regarding the firms size, 48% of this sample consists of SMEs and 52% of large firms.

2.2. Measurement of variables

Two variables were measured in this research: budgetary evaluation and environmental uncertainty.

To operationalize the budgetary evaluation in this research, we selected four items. A scale with five points (ranging for "1: not agree at all" to "5: totally agree") allows respondents to indicate their agreement with each of these situations: "the evaluation of the manager is based on its ability to realize the budget targets"; "you grant bonuses for responsible coming to realize the budget targets"; "you decide promotions for responsible coming to realize the budget targets" and "you punish responsible not coming to realize the budget targets". A high total score means a strict budgetary evaluation (budgetary evaluation system based especially on the achievement of the budget targets) and vice versa.

To measure the environmental uncertainty of the firms surveyed, we selected five items. These items are developed by Gordon and Narayan (1984): "dynamism of the economic environment"; "dynamism of the technological environment"; "predictability of the competitor's activity in the market"; "predictability of tastes and preferences of customers" and "review of marketing policies". For the two first items, the respondent had a choice of five responses (from 1 "very stable" to 5 "very dynamic". For items 3 and 4, there were 5 responses (ranging from 1: "completely predictable" to 5: "completely unpredictable"). Finally, for the last item, the respondent also had 5 possible answers (ranging from 1: "very rarely" to 5: "very often"). A high score means that the environment is uncertain and dynamic and vice versa.

3. RESULTS AND DISCUSSION

3.1. Diversity of the budgetary evaluation

To show the diversity of the budgetary evaluation practices in the companies surveyed, we used a classificatory analysis. It allows us to grouping similar practices. To do it, we used the "hierarchical classification" by a "Ward algorithm" that aims to minimize the internal variance of each class and maximize the variance between classes. The results of our analysis are shown in Table 1.

Table 1: The main categories of budgetary evaluation practices

Group		%
GROUP 1	Strict budgetary evaluation	21%
GROUP 2	Moderate budgetary evaluation	27.4%
GROUP 3	Lower budgetary evaluation	51.6%
Total		100%

We identified three main groups:

- Group 1: 21% of enterprises surveyed adopted a system for evaluating the performance of individual managers based specifically on the achievement of budget targets (strict budgetary evaluation);
- Group 2: over 27% of the sample are using moderately the evaluation systems based on achievement of budget targets (moderate budgetary evaluation); and
- Group 3: over 51% of the sample firms don't use the achievement of budgetary targets as a criterion to evaluate the individual performance of managers (lower budgetary evaluation).

3.2. Impact of the environment uncertainty on the budgetary evaluation

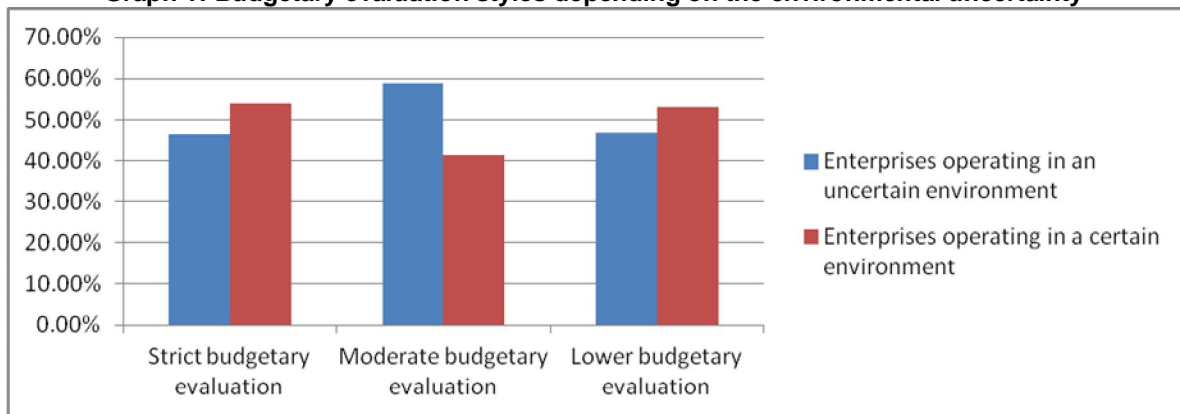
The results relating to the adoption of different styles of budgetary evaluation according to the environmental uncertainty are shown in table 2.

Table 2: Budgetary evaluation styles depending on the environmental uncertainty

Environment uncertainty ^(a)	Strict budgetary evaluation	Moderate budgetary evaluation	Lower budgetary evaluation
Enterprises operating in an uncertain environment	46.2%	58.8%	46.9%
Enterprises operating in a certain environment	53.8%	41.2%	53.1%
Total	100%	100%	100%

^(a) Distinction between uncertain environment / certain environment was done by using the median value

Graph 1: Budgetary evaluation styles depending on the environmental uncertainty



53.8% of enterprises adopting a “strict budgetary evaluation” operate in a certain environment, and 46.9% of companies adopting a “lower budgetary evaluation” operate in an uncertain environment. These rates that are very similar don’t give us a clear idea on the validation of the hypothesis research. A linear regression must be used.

The main results of linear regression between budgetary evaluation and environmental uncertainty are shown in table 3.

Table 3: Regression analysis between budgetary evaluation and environmental uncertainty

Independent Variable (environmental uncertainty)	Dependent Variable (budgetary evaluation)
β	0.024
t-statistic	0.182 ^{ns}
R ²	0.001
F-value	0.033 ^{ns}

^{ns} No Significant

The environmental uncertainty has no significant effect on the budgetary evaluation ($\beta=0.024$; $p>10\%$). The first variable explains only 0.1% of the variation known by the second variable (R²). The hypothesis of research is rejected by our analysis. There is not a significant relationship between environmental uncertainty and budgetary evaluation.

CONCLUSION

The aim of this article was the identification of possible differences between firms who adopted the budgetary evaluation system based on the achievement of the budget targets and others. In this research, we have identified three principal styles of budgetary evaluation: “strict budgetary evaluation” adopted by 21% of the sample; “moderate budgetary evaluation” adopted by 27.4% of enterprises surveyed and

“lower budgetary evaluation” adopted by 51.6% of the sample. The environmental uncertainty has no significant effect on the budgetary evaluation.

Two major methodological limits should be highlighted: the modest size of the sample and the use of a perceptual approach to collect data. In this regard, we can have a difference between the responses collected and the real practices. In front of these limits, the results obtained in this research must be used with great caution.

We used in this research the environmental uncertainty to explain the diversity of the budgetary evaluation. In this context, many avenues of research are considered. Others organizational variables (size, strategy, etc.) or non organizational determinants (leadership styles, the culture of leadership, legal ownership, etc.) must be also used to explain the diversity of budgetary evaluation practices.

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