



## Management control and performance management: case of the Moroccan public organization

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### ABSTRACT

The economic consequences of the Covid-19 crisis, Russia's military operation in Ukraine and the many changes currently going through the world as well as the reform of public administration have pushed Moroccan public organizations to improve their methods. management in order to reduce expenses while guaranteeing quality, satisfaction and safety for users. To do so, the roles and tools of management control have been forced to adapt. Our study focuses on the contribution of management control to the performance management of Moroccan public organizations through structural equation modeling with a sample of 87 public organizations.

### Introduction

Any organization manages a management budget, as said Dubois B. (1986), it allows it to make purchases, manufacture, store products, manage staff and distribute products and services. However, in the public sector the evolution of users, the appearance of consumerism, the strong thrust of scientific and technical innovation impose a new conception of the management of the organization and of public funds. Strategy analysis is the budget optimization tool which is a compromise between the financing needs of public organizations and the limitation of financial resources. Nevertheless, the pressures of the external environment, particularly in terms of quality and speed requirements on the part of users, also in terms of financial and economic requirements of supervision, are causing public organizations to evolve. Following the economic consequences of the Covid-19 crisis, Russia's military operation in Ukraine and the many changes the world is currently going through, Moroccan public organizations must improve their management methods in order to reduce expenses while guaranteeing quality, satisfaction and safety to users. Thus, faced with the current constraints and threats of the environment of public organizations, the management control system has been forced to change in

its tools, designs, roles and missions in addition to the internal regulation of the public organization must be interested in the adaptation of the public organization to the fluctuations of its environment. As a result, public organizations are now assigned, in addition to their main missions, missions of quality, profitability, control and organizational performance.

The importance of management control in the search for organizational performance is at the forefront of current debates. Admittedly, he oversees the implementation of the strategy and the management of overall performance, but he also has another more interactive and strategic role. Today no one can deny this importance, but unfortunately several reasons hinder its adoption, especially in the public sector. Several studies have shown that the implementation and development of management control systems bring superior performance to companies. The determinants of management control exert a positive and significant influence on management control and its implementation and consequently on the performance of the public organization. Today, the establishment of management control in the public sector is hampered, despite the positive correlation between the latter and the improvement of organizational performance. In the Moroccan context, few studies have focused on the contribution of the

determinants of management control to the performance of the public organization (Ahsina K., 2013). Our study constitutes a descriptive and confirmatory analysis of the reality of the Moroccan public organization. We therefore come to the interest of our article, and we wonder about the impact of the determinants of management control on the performance of the Moroccan public organization. We will present a literature review, research hypotheses, research methodology, research findings, and discussion.

### 1. Conceptual frame

The theoretical research model is defined as a set of relationships offering a coherent and understandable explanation of a management phenomenon (Roussel et al., 2002). In this model, each relationship between variables is supported by a hypothesis that is based on a theoretical framework or empirical observations. An overview of the literature devoted to this concept is necessary for the proposal of the theoretical model of the implementation of management control and its impact on organizational performance. Our model consists in assuming that organizational performance depends on the dimension "the establishment of management control" which itself depends on six dimensions which are: size, strategic planning, complexity of the activity, control external, the information system and the profile of the management controller. According to Anthony (1988), "management control is the process by which managers influence other members of the organization to implement organizational strategies". Thus, the transition from a universal classic approach applicable to all organizations to a flexible approach that adapts to the requirements of the context. However, the contextual factors of public organizations and their impacts on management control have been highlighted by contingency theory in the Moroccan context by Ahsina K. (2013). Gervais (2009) by supplementing the definition of Anthony (1988) defines performance by combining effectiveness which is the ability to achieve the desired objectives, efficiency which is the result achieved by the resources committed and relevance which is a harmony between the objectives and the means available, it is therefore the organizational performance. To measure the latter, it is necessary to choose observable, measurable or operationally defined criteria, these criteria must be able to discriminate between different performance gaps. Morin, Savoie, and Beaudin (1994) identified four dimensions of organizational performance defined by criteria and measured using performance indicators.

Contingency theory emphasizes the impact of environmental variables on the behavior of organizations. It

seeks a satisfactory solution for a specific company in a particular context. It thus abandons the idea of a good solution which can vary according to the situation. It sheds new light on the theories of organizations by seeking to understand the reasons for the correspondences between the type of environment, the form of the structure and the link with performance, on this last point, it presents an obvious normative character, its interest is to maintain the ability of control to renew itself and to adapt to more uncertain and more complex situations, especially since complexity is evident in organizations today. Carrying out a diagnosis is the first step in setting up management control. This is the analysis of the operation, an analysis of the priorities and the intentions which eventually lead to the evolution of the mode of management. Thus management control must adapt to the information needs of the organization and must not be applied in the same way in all organizations. Contingent approaches make it possible to carry out analyzes of the organization prior to the establishment of control, emphasizes Pariente P. (1999).

The size of the organization is a contingency factor that is correlated with its propensity to know and adopt management control tools. According to Dahlgren et al. (2001), the size factor is significant in explaining the adoption of management control. It influences the content of management control tools. Nobre T. (2001) specifies that the size of the organization constitutes a contingency factor explaining the management practices of organizations. Non-financial formal representations of performance are a priori more used in large organizations than in medium-sized ones.

Beyond the choice of an activity strategy, managers must opt for a control strategy. During the 1970s and 1980s, the work of Miles and Snow (1978) and that of Porter (1985) attempted to demonstrate the contingency of the strategy deployed by companies and the configuration of their management control systems. Three types of operationalizations of strategy in contingent research in strategy and control have been proposed by: positioning, mission or the typology of Miles and Snow (1978). The relationship between strategy and control insofar as the nature of control systems and processes cannot be separated from strategic considerations (Robert Simons, 1987). Langfield-Smith (1997) asserts that strategy was not used as a variable in research on control systems before the eighties, this is due to the non-existence until the end of the seventies of typologies making it possible to operationalize the strategy variable as a contingent variable (Chapman, 1997). According to (Dent, 1990; Langfield-Smith, 1997; Bouquin, 2000), strategy, which is a

contingency factor, plays an increasing role in the explanation of control systems.

Kalika (1987) noted that the most structurally differentiated and decentralized organizations have the most developed planning and control systems. According to Moisdon and Tonneau (1999), the complexity of the organization is understood as the impossibility of a formalization where all the actors involved in a sector would find their account, that is to say finally the answers to the questions that they arise. The complexity is manifested more particularly by the division of the activity which requires an ever finer analytical breakdown. It becomes obvious that the problem of the managerial approach will be found in the very representation of the activities, therefore the impact for management control is significant (Alami S., 2021).

The public organization, by the particularity of its activity, does not satisfy the basic conditions (Ouchi, 1977). He is confronted with a double constraint, requirements concerning their services and budgetary constraints, which leads to a strong demand for management tools (Moisdon, 1999; Halgand, 2000). Bartoli (1997) summarizes the three possible logics of performance in the performance triangle: effectiveness, efficiency and budgeting. These three logics connect the three notions: results, means and objectives. The logic of budgeting is traditional in the public sphere, it involves a notion of performance leading to compliance monitoring. These tools are intended to be used by general management for budget monitoring, with the objective of justification in relation to the supervisory ministries (technical and financial). This is an external control since its purpose is to inform them of the allocation of resources. The external control exercised over the public organizations of an administrative nature came from different sources, which are: the technical supervisory ministry with its regional directorates and the Ministry of the Economy and Finance with its regional directors, the revenue collectors, the controllers of the state and the paying treasurers, to monitor the accounting of expenditure commitments and to check the budget supply. According to (Burlaud A., Zarlowski P., 2003), "external control, whatever its form, is here often motivated by a learning and/or performance improvement objective", therefore, "the reinforcement of external control is legitimate, it leads to improving the governance structures of the company, the transparency of its operation, improves its economic effectiveness as well as its efficiency for the benefit of a greater number of stakeholders".

Theorists of the diffusion of information technology innovations have concluded through studies that large companies with a large information system are more willing to adopt information technology innovations. The

management controller is at the heart of the information process of the company, he is therefore confronted with the upheavals linked to the use of information and communication technologies. These upheavals have led to a major change in the informing role of the management controller. The problem essentially focuses on the aspect of shaping, processing, selecting and commenting on the information, and no longer on the way of producing or outputting the data (Löning and Pesqueux, 1998). The information system is an issue in the current practice of organizational management. Combes and Labrousse (1997) believe that the establishment of an information system makes it possible to rapidly develop indicators, to ensure their consistency, to update the dashboards at sometimes very short intervals and to transmit them quickly to the various actors of the organization. The information system must adapt to a set of contingent variables such as the strategy, the size of the organization, and the environment (Chenhall, 2003; Santin and Van Caillie, 2008). It made it easier to change from routine work to more analytical work (Alami S., 2021). Controllers have more time to perform value-added activities related to management control and decision-making (Scapens and Jazayeri, 2003; De Ronge, 2000).

Management control has developed through actions to organize standards and financial forecasts, combined with control of achievements. Chiapello E. (1990) showed that traditional management control was more the prerogative of former controllers, while advice was more frequent among young graduates. In the bureaucratic design, the management controller was primarily responsible for defining the management control system and making predefined management information available to decision makers. It should be emphasized that "we cannot consider the role devolved to management control, without stopping at the characteristics specific to the management controllers in place in companies. Similarly, a certain style of management control can only work if the management controller adheres to this style and is able to make it work" (Fornerino M. and Godener A., 2006). Bollecker M. (2002) considers that the purpose of the function according to this current is "the monitoring of activities, mainly at the service of general management". Studies have shown that the profile of the controller allows us to affirm that it has an important role in the differentiation of control systems, thus, a technical profile tends to exercise a diagnostic or traditional role, while a managerial profile is more in interaction with operational staff and therefore more likely to bring out new strategic opportunities.

The implementation of management control has always been accompanied by performance, as Anthony (1988) points out, management control is "the process by which managers ensure that resources are obtained and used efficiently, effectively and relevance, in accordance with the objectives of the organization and that the actions in progress are in line with the defined strategy. It also corresponds to the process which guarantees that the actions of the firm are efficient, that is to say that the value of the resources employed remains well below the value created socially recognized by the market". By completing this definition, Gervais (2009) defined the notion of performance as being the combination of efficiency, effectiveness and relevance. By studying the modes of control of the organization. Ouchi and Maguire (1975) suggest that control by measuring and managing outputs are used by managers to obtain objective proof of performance. The work of Ouchi (1979) on control showed different modalities depending on the ability to analyze and have knowledge of performance factors. As a result, "traditional management control, which is content to highlight discrepancies between forecasts and achievements, and is exclusively interested in the financial aspect, does not participate effectively in the firm's efforts to adapt to its environment" (Gervais M. and Thenet G., 1998). Several studies have followed one another since the 1970s to understand the impact of budgetary control practices on performance and on many other organizational facts, but the explanation of the form taken by budgetary control has remained less studied. A study in Morocco was able to show that "the establishment and development of control systems bring superior performance to companies" (Ahsina K., 2013). Other studies have shown that the implementation and development of management control systems bring superior performance to companies. Future-oriented management control is more open to perspectives that are not exclusively financial, and above all more adaptable to the needs of managers. It is likely to help them in their strategic or daily decisions in public organizations (Ahsina K., 2013).

From this work, we formulate the following hypotheses:

*H1: The larger the size of the organization, the more management control is likely to emerge and develop.*

*H2: Strategic planning is a prerequisite for setting up management control.*

*H3: The most complex organizations require the implementation of management control.*

*H4: The strengthening of external control leads to the establishment of management control.*

*H5: The information system is a prerequisite for setting up management control.*

*H6: The profile of the head of management control influences the implementation of management control.*

*H7: Organizations that have management control in place perform better than those that do not.*

## 2. Research methodology

After having operationalized the constructs, we opted for the quantitative method by questionnaire which was administered electronically to a convenience sample with a response rate of 45% and a final sample of 87 public organizations. We proceeded by a descriptive analysis by the software SPSS.v26, and by a confirmatory analysis by the software SPSS-Amos.v26. In the first stage of the confirmatory analysis, the instrumentalization of the paradigm of Churchill (1979) made it possible to carry out a purification of the scales and the specification of the respective measurement models, then, the second stage of this analysis was started. by testing the structural model using the LISREL approach.

**Table n° 1 – Type and frequency**

Public organization	Number	%
OP type 1	8	9%
OP type 2	11	13%
OP type 3	68	78%
<b>Total</b>	<b>87</b>	<b>100%</b>

Source: compiled by ourselves

## 3. Results

We empirically estimated all the parameters of the model, namely the regression coefficients and their confidence intervals, the shared variables ( $r^2$ ) of each variable explained by other variables of the model and the variances of the terms of unconstrained error. With regard to the adjustment indices of the structural model, the latter presents an acceptable quality of adjustment.

**Table n° 2 – Structural model adjustment indicators**

Indices	Indicators
P	0,09
GFI	0,11
AGFI	0,13
SRMR	0,03
RMSEA	0,05
NFI	0,92
CFI	0,95
$\chi^2/DDL$	1,37
PNFI	0,21

Source: Output from SPSS-Amos software

The elements for verifying the plausibility of the hypotheses associated with the structural model are presented in the following table, in particular the correlation rate  $\beta$  and the Student's  $t$  (T). The hypothetical relationships in our structural model all seem to be significant except one, the

first is that of the relationship between the complexity of activity and the establishment of management control ( $\beta = 0.15$ ;  $T = 1.14$ ;  $P = 0.13$ ), this relationship is both weak and non-significant (this is a hypothesis to be rejected).

**Table n° 3** – Statistical tests of hypothetical relationships within the structural model

	Hypothesis	( $\beta$ )	(T)	P	Decision
H1	SO $\rightarrow$ IMC	,85	5,00	***	Validated
H2	SP $\rightarrow$ IMC	,91	5,12	***	Validated
H3	CA $\rightarrow$ IMC	,15	1,14	,13	Rejected
H4	EC $\rightarrow$ IMC	,63	4,45	***	Validated
H5	IS $\rightarrow$ IMC	,79	3,99	***	Validated
H6	PMC $\rightarrow$ IMC	,84	5,17	***	Validated
H7	IMC $\rightarrow$ OP	,83	4,99	***	Validated

Source: Output from SPSS-Amos software

The explanatory power of the model is reflected by the percentage of the variance of the endogenous variables that it manages to explain. Similarly, the variance explained by the model seems excellent. As shown in the table below, the structural model explains 85% of the variance in organizational performance.

**Tableau n° 4** – Variance Explained

	Estimate
SO	,75
SP	,69
CA	,00
OP	,85
EC	,73
IS	,93
PMC	,89
IMC	,84

Source: Output from SPSS-Amos software

After having tested the validity of the modeling of reality through empirical observations, the hypothetico-deductive methodology adopted as the framework of this work requires drawing the consequences of the results of the tests with regard to the general theory which founded the hypotheses of the model. We have limited our field of research to quantitative studies. It will serve us both to argue the external validity of the empirical results and to illustrate and understand certain realities, and possibly to formulate empirical propositions allowing subsequent tests. The results of the quantitative empirical study are generally considered sufficient for this purpose.

The structural model of our research has been corroborated as a whole by the empirical data collected, it validates six hypotheses out of seven. It tells us that the organizational performance of the public organization could be dependent on management control and its implementation, which is itself dependent on its determinants.

The plausibility of almost all of the hypothetical relationships reassures us about the determinants of management control and the organizational performance of the public organization. It also invites us to worry less about the

configuration of influence of the determinants of management control to devote ourselves more to the in-depth examination of the underlying dimensions. Such a reading of the results could help us better understand the challenges of the determinants of management control associated with improving the organizational performance of public organizations.

By proposing a modeling of the structural relations of the explanatory variables, we tested the theoretical model with the data collected from the reality relating to management control and the impact of its determinants on the organizational performance of public organizations. Indeed, the regression coefficients of the structural relationships have proven to be closer to the theoretical recommendations for adaptation to the determinants of management control. In addition, the coefficient ( $r^2$ ) of the endogenous variable explained by the structural model showed a satisfactory value, thus providing confidence in the linear nature of the relationships that link them to the determinants of management control.

The notion of organizational performance prescribed by researchers, practitioners and consultants, which is strongly attached to the determinants of management control, has real foundations and universal validity. It can be said that the place of management control in the managerial system of the Moroccan public organization is subordinated to the determinants of management control which are: size, external control, information system and strategic planning.

## Conclusion

The results obtained militate in favor of the existence of a positive, strong and significant link on the one hand between the determinants of management control (as they have been operationalized) and the implementation of management control and between the latter and the organizational performance of public organizations on the other hand. This study therefore admits that the establishment of management control positively and significantly influences the organizational performance of Moroccan public organizations. This research has an innovative and exploratory character due to the fact that its field of study seems practically virgin territory and little studied by researchers in Morocco. It can be suggested that the configurative modeling of structural relationships is probably closer to reality in Moroccan public organizations. The results found will deserve special attention in future research.

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