

Does the Environment Responsibility Affect the Management Control System?

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ABSTRACT

The literature suggests a problem emerging between management controls systems with the new responsibilities that companies must take into consideration. This study examines a system design management control tool orientation as behaviors that can overcome the uncertainties related to the environment and register the company in a voluntary approach which takes into account the environmental dimensions. A questionnaire survey sent to 306 Tunisian industrial companies was conducted. The results of the exploratory and confirmatory analysis are required. The results of the principal component factor analysis evidenced by Cronbach's alpha and KMO test, helped to cleanse the items selected from the literature. Similarly, the results of structural equations with indices of structural adjustment and parcimonies have devoted a good quality adjustment. Overall, findings suggest that most of the firm's environment is uncertain, more tools to include in its environmental dimensions. On the other hand, the voluntary integration of an environmental approach is part of a strategy of cost leadership in the Tunisian industrial companies.

KEYWORDS: *Management control system, Environmental responsibility, Environmental uncertainty, Strategy*

JEL CLASSIFICATION: *M41, M14, F64, F69*

INTRODUCTION

Since the early 1990s, performance measurement systems do not stop to evolve. This is realized by the many contributions that have not ceased to adapt the strategies of the organization with the development of the overall business environment. Delmond and Chiapello (1994) proposed a qualitative representation. They propose to incorporate non-financial information in the systems of performance management. Kaplan and Norton in 1998 involve the integration of non-financial indicators in measuring systems business performance as internal processes, organizational learning, customer satisfaction and shareholder in the Scorecard. Eco-control or management control societal is an adaptation of the traditional components of management accounting (Henri & Journeault, 2006).

Eco-control is a control system that includes an axis societal important for corporate accountability facing environmental issues and see far into account sustainable development in companies. Thus, the management control exceeds the thresholds

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conventional approaches for financial introduce various indicators meet societal expectations and sustainable development. Particularly for management control is a tool consisting of steering the overall performance. In fact, the mission of the business is not in achieving financial goals short and medium term but it should also include societal concerns types to promote sustainable development. Parallel to this development, the concept of business performance has changed a traditional view of performance that is limited to a short-term financial vision of the company by a broader more comprehensive three-dimensional performance (Reynaud, 2008). Systems performance measures are conventions effort, that is to say, a structure to coordinate the behavior of agents in an organization. Similarly, the theory of resource dependency advance understanding of organizational behavior, which is to understand how organizations connect with other social actors in their existing environment. For the actor dependent, it is, in particular, to reduce uncertainty by structuring its exchange relationships through links formal or semi-formal with other firms such as contracts (Nogatchewsky, 2005). Hence, firms respond to institutional pressures, are more likely to exploit their own resources most qualified rare, which gives them continuity in an uncertain environment. Theory stakeholders are end point views satisfy the interests of each group and not as a means to achieve other goals.

The paper begins by providing a review of the literature, which is followed by the development of the research hypotheses. The third section describes the research methods for sample and data collection procedures. The research hypotheses are tested in section four and discussed in section five. Finally, conclusions are drawn in section six.

1. ENVIRONMENTAL MANAGEMENT CONTROL SYSTEM

The control systems are defined as environmental management systems with the aim of steering the monitoring environmental performance through the tools provided by qualified traditional management control, they are able to decline environmental strategies. In fact, dashboards, budgeting tools are the most common strategies for environmental decline. Simons (1991) defines the control system as environmental management systems that provide indicators related to environmental performance that companies use to influence the behavior of managers towards the achievement of the environmental organization type. For Caron et al. (2007) define a control system of environmental management as a management control system which contains a section aimed at societal and corporate responsibility to meet its environmental objectives to its environment. These objectives are presented in the form of performance indicators that meet the objectives of the organizations in sustainable development. In fact, for companies that want to manage their environmental performance, ISO 14000 and EMAS are ways of valorization of these environmental policies.

In fact, the establishment of a procedure systems performance measures refer to environmental efforts in standardization organizations standards ISO 1400 and EMAS standards (standards of management, performance and environmental audit).

Thus, the EMAS appeared in 2001 for companies and non-governmental organizations is part of a process to ISO14001. Similarly environmental policies and charters are defined as policies that include a set of rules and procedures that organizations are required to adhere to a constraint imposed by the regulations. Later, reporting of environmental indicators is reflected in the establishment of environmental information systems can facilitate the

movement and monitoring of environmental performance between the different members of the organization and in different hierarchical levels.

This type of reporting is a tool for benchmarking the environmental information system provides the driver with information and indicators for the evaluation of the branch. Finally, environmental audit type is an internal or external audit tool and control of corporate environmental performance in order to improve this performance.

It plays an important role in the context that provided information on the effectiveness of performance measurement systems and environmental solutions if the measuring environmental performance does not meet the business objectives.

Pesqueux (2004) and Simons (2000) find that management control systems are designed as environmental control systems whose primary role is monitoring environmental performance through the tools provided by the management and control are able decline environmental strategies.

1.1 Environmental Control system management and contingency theory

Contingency theory is a set of variables forming a coherent consistent operation of the business and the proper conduct of its actions.

As an application in the field of management control theory has shown that the characteristics of control modes in general and management control systems are influenced by factors known contingencies.

Indeed, the contingency factors most cited in the literature are the size, strategy, environment, technology, culture, etc.....

In fact, the literature review of the main empirical studies that relate to our problem enabled us to make assumptions about how companies are likely to focus on the environmental and integrate their control systems. Hence, our first hypothesis underlying:

H11: The Environmental Responsibility has an influence on control systems companies which perceive their environment as uncertain.

2. METHODOLOGY AND DATA COLLECTION METHOD

2.1 Methodology

We conducted a field investigation, by adopting the technique of investigation through direct interview based on a questionnaire. We conducted a survey of a sample of 350 Tunisian companies' selected industrial sectors and through a pre-exploratory.

2.2 Method of data collection

2.2.1 Measurement control system management

In their studies Germain and Gates (2010) used a Likert 5-point scale of 1 (very poor) to 5 (very high), the degree of presence of financial indicators and non-financial indicators relating to key variables management (cost, quality, productivity, time, etc), market (customer satisfaction, market share, etc.) to intangible (human resources, information

systems, innovation, etc ...). The scale proposed by Germain and Gates (2010) distinguishes between financial and non-financial indicators in corporate piloting tools based on different axes axis either financial center customers, internal business process, and learning and innovation center axis finally dedicated to corporate social responsibility (CSR). To characterize the control system, the question was: How important is your management control system gives he following? Including the proposed scale had 7 points, the two extremes being weak and strong. This scale is based on the work of Kaplan (1992).

2.2.2 Measurement uncertainty of the environment

In studies Bescos, Langevin and Mendoza (2004) try to measure the degree of uncertainty in the environment; these authors used the perceptions of respondents on the basis of a Likert scale to 7 points.

Henceforth, the uncertainty of the environment was measured using seven items. This scale has been translated into the work of Govindarajan (1984) who tried in his work to ask respondents to express their level of agreement on the difficulty of predicting a number of elements of the environment.

2.2.3 Strategy

The link between strategy and management control systems based on the idea that the greater or lesser importance given by the company at different aspects of its performance depends heavily on its strategic direction (Shank, 1989).

Companies those are moving towards domination strategies for cost control focus systems management focus on costs and financial information (Shank, 1989).

These findings were reflected in the work of Shank and Govindarajan (1993), who found that non-financial indicators are more present in firms that adopt differentiation strategies. Companies that opt for these strategies are likely to be more sensitive to external influences, consumer needs and trends of society in general (Gosselin and Dubé, 2002).

Generally, corporate social responsibility is seen as a voluntary integration by companies of social and environmental concerns in their business operations and in their interaction with their stakeholders.

This essentially means that liability companies, on their own initiative, contribute to improving society and the environment, in conjunction with their stakeholders. Hence, our second hypothesis underlying:

H12: Environmental responsibility has an influence on the control systems of companies that adopts a differentiation strategy.

3. RESULTS

3.1 Exploratory and confirmatory factor analysis

Using SPSS, we first tested the reliability and validity of the scales measures by adopting an exploratory factor analysis type principal component analysis. In this context, we repeat the principal component analysis where the communalities are lower (0.5).

Similarly, the Cronbach's alpha of (0.60) was used as the threshold to decide whether or not to include an item in a scale.

According to Evrard et al. (2003) the purpose of the exploratory and confirmatory factor analysis can be considered from two different perspectives. Empirically, this technique is a purely statistical approach to data structuring. While theoretically it is a psychometric approach to measurement of unobservable concepts. For Joreskog and Sorbom (1982) use statistical indicators such as the GFI (Goodness of Fit), the RMR (Root Mean Square Residual), as well as other comparators such as AIC (Akaike Information Criterion)

Indeed, the exploratory and confirmatory factor analysis allows well purify scales and measures to ensure the verification of reliability, consistency and dimensionality of these.

As an additional tool for evaluating reliability, inter-item correlations were calculated for each dimension. This allowed through the KMO index and Cronbach's alpha to purify the different scales of measurement object variables of our empirical study. Thus, our results are presented in the table above:

Table 1. Results of the exploratory factor analysis

Indices of goodness of fit	MCS	UNCERT	E.R	STRAT
KMO Indice	0.770	0.733	0.500	0.763
Cronbach Alpha	0.838	0.783	0.558	0.821
Significance of Bartlett	0.000	0.000	0.000	0.000
Number of items selected	4	4	2	5

Source: author

Once the exploratory analysis is completed, we move to confirm the internal validity of the scales, where a confirmatory factor analysis is required. We have adopted in this case the different indices of adjustment provided by the AMOS software namely index RMSEA, RMR, CFI, GFI, CAIC, etc..

Table 2. Results of the confirmatory factor analysis

Indices of goodness of fit	MCS	UNCER	ENV. R	STRAT
χ^2 (associated p-value) χ^2 /ddl	0.838	0.900	3.773	1.524
GFI	0.999	0.995	0.992	0.994
TLI	1.007	1.003	0.957	0.958
CFI	1.000	1.000	0.986	0.987
RMR	0.033	0.038	0.048	0.054
CAIC (tested model)	0.000	0.000	0.095	0.041
CAIC (saturated model)	16.838 20.000	36.500 42.000	12. 000 12. 773	28.573 30.000

Source: author

3.2 Testing the structural model

To test the structural model, we transformed models measures containing items retained in the factor scores by adopting the method of Anderson Rubin.

This method provided by the SPSS statistical software to calculate factor scores for each measurement scale based on items selected. Thus our structural model is as follows:

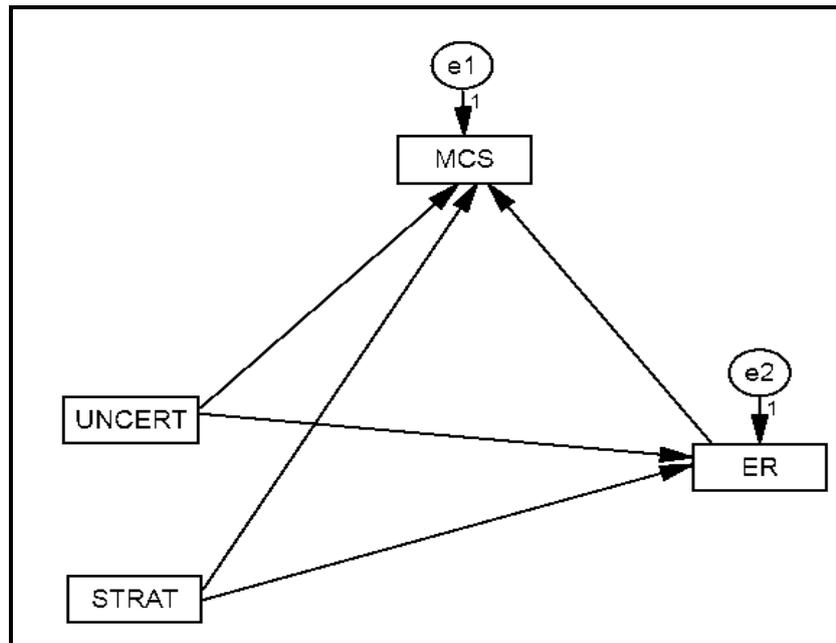


Figure 1. Structurel Modèle

Source: author

Thus, the following table shows the test results of the structural model show a very good fit judged by indices.

Table 3. Test results of the structural model

Indices of goodness of fit	MCS
χ^2 (valeur p associée) χ^2 /ddl	0.197
GFI	1.000
TLI	1.006
CFI	1.000
RMR	0.009
CAIC modèle testé	18.197
CAIC modèle saturé	20.000

Source: author

3.2.1 Analysis of the significance of the model parameters

The results of the analysis of the structural model of table 4 ride all the coefficients are significant at the 5% level. Indeed, the results express a strong and significant relationship between environmental responsibility and management control system evidenced by a positive regression coefficient equal to (1.028). This confirms our first hypothesis of the influence of environmental responsibility on the management control system.

These results confirm those found by Simons (1991, 2000) and Pesqueux (2004), which are able to conclude that the control systems of environmental management systems are driving environmental performance through monitoring tools management skills. Similarly, through the results, we found a positive and significant relationship (0.266) between the uncertainties related to the environment with that of environmental responsibility.

Subsequently, the same results suggest a negative but are significant at the 5% level between the control system and management of uncertainty related to the environment. A weak relationship with a regression coefficient equal to (-0.277). This calls into question more than the business environment becomes increasingly uncertain, it is vice versa on management control systems. These findings confirm those found in previous work, including Chia (1995) and Gosselin and Dubé (2002).

Indeed, the more the business environment is perceived uncertainty, the more they adapt to environmental information. Which validate our first hypothesis underlying environmental responsibility influence control systems management companies perceive their environment as uncertain. Finally, a positive and significant relationship between strategy and environmental responsibility evidenced by a regression coefficient equal to (0.326), it shows that the strategy of the company positively influences environmental responsibility. Further, a positive relationship between strategy and management control system with a coefficient equal to (0.158).

This calls into question the positive impact of the strategy on management control systems. This finding supports environmental responsibility influence management control systems of firms adopting a strategy. This will confirm our second hypothesis underlying.

Table 4. Analysis of the significance of the model parameters

Regression coefficient	Estimate	S.E.	R.C.	P
R.E <--- INCERT	0.266	0.052	5.143	***
R.E <--- STRAT	0.326	0.052	6.303	***
SCG <--- INCERT	-0.277	0.019	-14.448	***
SCG <--- STRAT	0.158	0.020	-8.069	***
SCG <--- R.E	1.028	0.020	50.522	***

Source: author

4. DISCUSSION

The objective of this paper is to understand the behavior of systems of management control through prescription of non-financial indicators in an uncertain environment. For this, we discussed an empirical study with reference to research methodology. Our sample includes 306 companies selected all Tunisian industrial companies. Our results confirm those found in previous studies including Chia (1995), Gosselin and Dubé (2002) and Simons (1991, 1994). Indeed, management control is designed as a guidance tool behavior can interact with environmental responsibility. This phenomenon is accentuated in environments that are becoming increasingly uncertain and part of a strategy of differentiation. Hence, the assertion that the system of management control in the Tunisian industrial companies is oriented towards environmental responsibility. It is emerging in response to pressure from the uncertainty in the environment and comes in a differentiation strategy.

CONCLUSION

Systems performance measurements have been many adaptations to organizational strategies, economic and environmental. Several scholars have tried to propose the incorporation of environmental responsibility in the concerns of companies.

It is a fact confirmed more especially with the emergence of new virtual economy. Bollecker and Mathieu (2004), Simons (1991) and Langfiels and Smith (2004) have defined management control as a system that can influence the behavior of individuals at the end of the goals of the company. This has led to strategic objectives in the definitions of organizations that exceed the financial performance. At this level, the financial performance is closely expanded to take into account considerations of social, environmental and ecological.

This study focused on the effect of adding and taking into account qualitative indicators that take into account environmental indicators in the equipment control system management. A survey was developed from a questionnaire sent to 306 Tunisian industrial companies.

The results of different analyzes exploratory factor and test the structural model by the method of structural equation helped to distinguish the system of management control is influenced by environmental responsibility, it is more important in companies who perceive their environments as uncertain and are part of a differentiation strategy.

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