EXAMINING THE IMPACT OF MANAGEMENT CONTROL SYSTEMS USE ON THE DEVELOPMENT OF FIRM CAPABILITIES

Área de investigación: Informática Administrativa

Daniel Ballesteros Orozco
Universidad Autónoma de Barcelona
España
dballest@itesm.mx, dballest@me.com

Joan-Lluis Capelleras
Universidad Autónoma de Barcelona
España
joanlluis.capelleras@uab.cat

Yancy Vaillant
ESC Rennes School of Business
Francia
yancy.vaillant@gmail.com

EXAMINING THE IMPACT OF MANAGEMENT CONTROL SYSTEMS USE ON THE DEVELOPMENT OF FIRM CAPABILITIES

Abstract

Organizations under great pressure to deliver value, believe that Management Control Systems (MCS) can help them in this task. MCS research has been done regarding design criteria, purposes, types and factors that influence the adoption or use, but less is known about MCS impact in the organizational capabilities that trigger performance. The research question is what is the impact of MCS use in generating capabilities of Entrepreneurial Orientation and Learning orientation in firms. The hypothesized relationship was supported by evidence from a study of 644 firms in Mexico. The main findings show that the type of MCS use is related to the capabilities of EO & LO, independently on its size or industry and somehow against the theory all relationships are positive. Resource-based-theory (RBT) (Barney, Ketchen, & Wright, 2011) and management control literature (Simons, 1995; Vandenbosch, 1999) are the context to explain the MCS role and relationship to capabilities.

Keywords: Management Control Systems (MCS), Performance Measurement Systems (PMS), Capabilities.

Octubre 2, 3 y 4 de 2013 ◆ Ciudad Universitaria ◆ México, D.F.

ANFECA
Asociación Nacional de Facultades y
Escuelas de Contaduría y Administración

EXAMINING THE IMPACT OF MANAGEMENT CONTROL SYSTEMS USE ON THE DEVELOPMENT OF FIRM CAPABILITIES

1. INTRODUCTION

As part of the strategic process, consisting of three main phases (Formulation, implementation, performance) (Hitt, Ireland, & Hoskisson, 2011; Rumelt, Schendel, & Teece, 1991), exists an activity that is common to all phases, where activities and results are monitored, so that actual performance can be compared with desired performance and managers can take corrective actions. Is in this activity where MCS are responsible for creating the models and systems to support the strategic process. MCS are defined as the process by which managers ensure that resources are obtained and used effectively and efficiently in the accomplishment of the organization's objectives (Anthony, 1965). The information provided is relevant in all strategic process phases (Widener, 2007) providing information on the drivers of success and causes of failures (Mintzberg, 1994; Simons, 1995). Over the last two decades, the development of the MCS has been exponential and has triggered the need for a better understanding of his role and how they can meet managerial needs. In the line of approaches that see MCS as more than mechanistic tools, but also as powerful devices to stimulate and manage the emergence of strategies, this research focuses on four MCS´s uses (Monitoring, Legitimizing, Attention Focusing, Strategic Decision-Making) and its relationship with two firm organizational capabilities that are related to superior performance (Ripollés & Blesa, 2005), Learning and Entrepreneurial Orientations (LO & EO).

From the resource-based perspective (Barney, 1991), MCS (resources) do not generate rents per se, but rather are a function of the way they are used (Penrose, 1995). Even assuming that MCS can be employed for different uses, there is a lack of prior empirical research examining his use. Some studies suggest that capabilities are shaped by MCS, but how?. Research on MCS use & capabilities have yielded valuable, but ambiguous, inconclusive or sometimes contradictory results. We can see positive (Cruz, Scapens, & Major, 2011; Simons, 1990; 1991; 1995) or negative (Bisbe & Otley, 2004) relationships between MCS and innovation or learning (Ahn, 2001; Chenhall, 2005; Godener & Söderquist, 2004), or mixed depending on how the MCS are used; positively related (used interactively) or negatively (used as diagnostic) with capabilities (Henri, 2006a; 2006b). Except the one done by Henri (2006a, 2006 b), there are no studies linking the various MCS uses and its impact on firm strategic capabilities (Berry, Coad, & Harris, 2009). Despite all these studies, there is still a need to better understand the impact of the various MCS uses on organizational capabilities in different kind of firms (i.e. SME´s or services).

Based on the studies insights and the fact that the impact of MCS on capabilities remains unclear, this work argued that the different MCS uses (Simons, 1995; Vandenbosch, 1999) could encourage the development of strategic firm capabilities. Specifically the research question in this work is: What's the impact of MCS use in generating capabilities in the firm?. This work also seeks to investigate how MCS uses determine LO & EO capabilities and the role-played by the firm characteristics in this relationship. Contributions of this study are to improve understanding of how the various MCS uses can be a source of competitive advantage and to perform an empirical application in a big sample of different sectors (Manufacturing, Services, Trade and Banking); Previous studies have been in samples of 100-300 and focused only on manufacturing

Octubre 2, 3 y 4 de 2013 ◆ Ciudad Universitaria ◆ México, D.F.

ANFECA
Asociación Nacional de Facultades y
Escuelas de Contaduría y Administración

firms (Bisbe & Otley, 2004; Cruz et al., 2011; Henri, 2006a; 2006b), also such studies were not performed in SMEs and have not been compared with large firms.

2. THEORETICAL FRAMEWORK

This work draw on the principles of Resource Based View (RBV) (Barney, 1991; Day, 1994; Wernerfelt, 1984) and capabilities literature (Teece, Pisano, & Shuen, 1997), to explain how firms achieve sustainable competitive advantages. RBV rests on the principle that competitiveness is a function of the strength, exploitation and leveraging of specific internal resources and capabilities controlled by a firm (Lengnick-Hall & Wolff, 1999) and conceptualizes firms as a group of resources heterogeneously distributed across firms and that resource differences persist over time. In other words, they are tied semi-permanently to the company and the sources of sustainable competitive advantage are specific and idiosyncratic resources (rare, valuable, imperfectly imitable and non-replaceable or substitutable) that cannot be easily duplicated (Wernerfelt 1984; Barney 1991). Some studies provided evidence to suggest that firm-level resources and capabilities, not industry characteristics (Porter, 1980), are the primary determinants of firms' performance (Hoskisson, Hitt, Wan, & Yiu, 1999). Capabilities are a link between resources and their deployment, because are organizational processes and routines to integrate, reconfigure, gain and release resources, to match and even create market change (Eisenhardt & Jeffrey, 2000; Grant, 1996). According to RBV principles, firms must pay special attention to identifying, developing, protecting and using those resources and capabilities that assure the achievement of a sustainable competitive advantage.

Learning Orientation (LO) capability was defined as the development of ideas, knowledge and relations among past actions and future actions (Fiol & Lyles, 1985), and is considered to be an important facilitator of competitive advantage by improving a firm's information processing activities at a faster rate than rivals do (Baker & Sinkula, 1999; Hurley & Hult, 1998), but is necessary to have frequently updated information. Some studies reports that high performing firms rely on the information provided by frequently updated formal control systems to drive organizational learning and argue that MCS has a significant positive impact on staff perceptions about learn capability (Simons 1990). The use of MCS supports a holistic view at all the strategic processes, resulting in organizational learning. Entrepreneurial Orientation (EO) capability is the set of processes, practices and decision-making activities undertaken to successfully manage the entry of a new company to market (Covin & Lumpkin, 2011; Covin & Slevin, 1989; Lumpkin & Dess, 1996). A permanent attitude of the company that is proactively seeking new business opportunities (Rumelt et al., 1991; Zahra & Garvis, 2000) favoring the generation of competitive advantage (Lumpkin, Cogliser, & Schneider, 2009).

There is growing literature interest in identifying and defining the determinants of organizational capabilities (such as EO and LO), MCS play an important role here, because as discussed above, they have a direct impact in the ways and perceptions related to learning and they can support strategic decision making in the company related to the market, opportunities and results.

Management Control Systems are formal (planning, budgeting or reporting systems, monitoring procedures, etc.) or informal (weekly meetings, daily checks, emails, etc.) procedures (Simons, 1991) present in common business management practices (Mintzberg & Waters, 1985). MCS seek to influence human activity within the company.

Octubre 2, 3 y 4 de 2013 ◆ Ciudad Universitaria ◆ México, D.F.

ANFECA
Asociación Nacional de Facultades y
Escuelas de Contaduría y Administración

MCS are comprised of multiple control systems that work together (Widener 2007), for example, Performance Measurement Systems (PMS) are one important aspect of MCS and represent the process and the set of metrics used to quantify both the efficiency and effectiveness of actions (Neely et al. 1994) by providing the information necessary to challenge the content and validity of the strategy (Ittner et al. 2003).

Langfield Smith (1997), argues that the best way to approach the study of administrative controls is by looking at the different uses that give those who use them (Langfield Smith 1997). This study combines two MCS uses classification and relates both to identify the expected relationships (Figure 1): The theoretical levers of control (LOC) proposition (Simons, 1995) and the Vandenbosch (1999) MCS use classification.

LOC proposition (Simons, 1995) has four types of MCS use: **Beliefs** and values are systems to secure commitment towards goals and to inspire employees in their search for opportunities and solutions. Belief systems are an

Figure 1: Management Control Systems (MCS) uses

Levers of control (Purpose)

Beliefs	Commitment towards goals and to inspire, values, vision, direction	
Boundaries	Administrative controls hierarchically based, guidelines for behavior	
Diagnostic use	Control over organizational goals	M C S
Interactive use	Enable to search opportunities, solve problems and make decisions)	

Simons (1991, 1995)

Type of use

Score Keeping (Monitoring)
How am I doing?

Legitimizing:
to justify decisions or actions

Attention focusing:
What problems should we look into?

Problem solving
St. decision.-making
employed as a facilitator

Vandenbosch (1999)

explicit set of organizational definitions or procedures, that might be use by top management (Marginson 2002) to communicate formally the organization's basic values, purpose vision and direction (Simons 1995). Belief systems are: Communication channels, formal mission statements, credos, statements of purpose, email, meetings, (un) written codes of conduct, strategic planning systems and formal rules and procedures. **Boundaries** lever of control is an explicit set of organizational definitions and parameters; administrative controls hierarchically based (Marginson 2002), expressed in negative or minimum terms (Simons 1995). Any system that sets out minimum standards or guidelines for behavior can be used by managers as a boundary lever of control (Pun & White 2005; Mundy 2010). For example boundary processes aim to prevent employees from wasting the organization's resources. **Diagnostic** (control over organizational goals) refers to the use of MCS, including PMS (performance measurement systems) or KPIs (key performance indicators), to monitor organizational performance against important dimensions of a given strategy, with a broad range of metrics in key areas (Marginson 2002) used to compare actual performance against pre-set targets (Simons 1995) to identify exceptions and deviations from plans (Navarro & Guerras Martín 2001; Mundy 2010)**,** and **Interactive** MCS use consists in formal two-way processes of communication between managers and subordinates, where employee participation is encouraged in a formal process of debate (enable employees to search for opportunities, solve problems and make decisions). In this use, managers involve employees in the objective design to find relationships within and performance measurement, as a form to share information (Simons 1995; Henri 2006a; Mellahi & Sminia 2009; Mundy 2010). An example of this practice is creation process of a Balanced Scorecard (Kaplan & Norton 1992). In this study we focused in these last two uses (diagnostic and interactive uses) because MCS are present and related with them (Simons, 1990).

Octubre 2, 3 y 4 de 2013 ◆ Ciudad Universitaria ◆ México, D.F.

ANFECA
Asociación Nacional de Facultades y
Escuelas de Contaduría y Administración
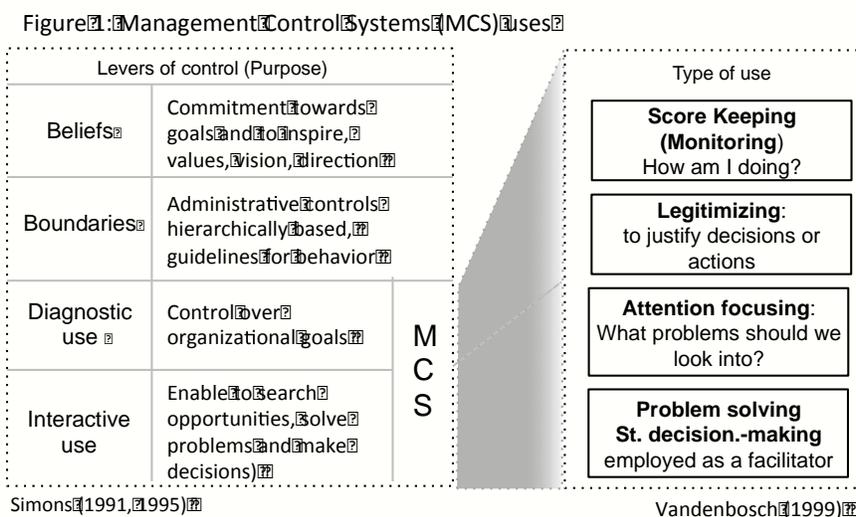
The second MCS use classification (Vandenbosch, 1999) has four MCS uses: **1.Score keeping (Monitoring)**: Score keeping are standardized processes that evolve over long periods of time within an organization. Monitoring use responds to the question: How am I doing? (Simon, Guetzkow, & Kometsky, 1954). Here MCS are used to provide feedback regarding expectations; A feedback system where goals are previously defined, outcomes are measured and compared with the goals, thus providing feedback, that enables the necessary corrections. Monitoring is characterized by consistency between time periods so that comparisons are easy to make (Vandenbosch 1999). This type of use is similar to diagnostic control (Simons, 1995). **2.Problem solving (Strategic decision making)**: Problem solving concerns to a non-routine issue that requires top manager´s commitment and requires information to support the analytical processes of strategic decision-making. Fast decision makers use more information and develop more alternatives than slow decision makers (Eisenhardt 1989). This type of use is similar to an interactive control (Simons, 1995). **3. Focusing organizational attention:** The organizational learning associated with an attention-focusing MCS use, contributes to the emergence of new strategies within the organizations (Mintzberg, 1978; Simons, 1990) by responding to the question, what problems must we focus on? (Simon et al., 1954). This type of use is similar interactive **control** (Simons, 1995); **4.Legitimizing decisions**, refers to justify a decision that has been made and is a major reason for the use of a decision support system (Vandenbosch 1999). MCS can be used to justify and validate past actions and increase and ensure the legitimacy of future actions. MCS use information of the entire firm, what gives them the authority and credibility to provide legitimacy of activities. This type of use is similar to diagnostic control (Simons, 1995).

Theoretical model and hypotheses

Figure 2, presents the conceptual model of this work and also represents the relationships that we seek to demonstrate. The major premise behind this model is that monitoring and legitimization uses (Vandenbosch, 1999), acting in a diagnostic mode (Simons, 1995), influence negatively on the capabilities. Likewise, it is expected that attention focusing and strategic

Figure 2. Theoretical model

Source: Own devised

decision-making uses (Vandenbosch, 1999), acting in an interactive manner (Simons, 1995), can help to improve capabilities positively. Hence this work has 8 hypotheses: Monitoring MCS use exerts a negative influence on LO (H1a) and EO (H1b). Legitimizing MCS use exerts a negative influence on LO (H2a) and EO (H2b). Attention focusing MCS use exerts a positive influence on LO (H3a) and EO (H3b). Strategic decision-making MCS use exerts a positive influence on LO (H4a) and EO (H4b).

Octubre 2, 3 y 4 de 2013 ◆ Ciudad Universitaria ◆ México, D.F.

ANFECA
Asociación Nacional de Facultades y
Escuelas de Contaduría y Administración

3. DATA, VARIABLES AND METHODS

Data were collected from primary sources with a structured survey from business managers in the manufacturing, trade, banking and service sector in Mexico City. The target population consisted of 4750 Mexican firms listed in DENUE 2012 database (see appendix A). The questionnaire was designed following the steps suggested by the literature (Dillman, 2000), 1) Select in the literature of strategy and management control systems the constructs that measure the variables and drawing up a first draft of the questionnaire; 2)This draft is contrasted with interviews of members of the target population; 3) Make adaptations based on the comments received; 4) Choose an attractive format, good quality WEB and printout form.

Table 1. Convergence and discriminant validity

Exploratory Factor Analysys		MCS uses (27 items)	Capabilities (18 items)
KMO	KMO	0.956	0.961
Bartlett's Test of Sphericity	Chi-Square	11860	9884
	df	351	153
	Sig.	0.000	0.000
Cronbach's Alpha		0.958	0.952
N of Items		27	18

Collection of information: We collect the information over the course of eight weeks we used two systems, Online and Offline systems; Online was administered by a professional service called encuestafacil.com, Offline was administered by a professional market research. 323 (50.2%) completed surveys were collected trough online participation and 321 (49.8%) were performed offline, giving a total of 644 units (13.56% of the sample). The response rate was calculated as a percentage of the number of usable filled questionnaires out of the number of sent questionnaires (13.56%).

The invitation to participate consisted of an initial personalized email letter. In order to increase the response rate (Dillman 2000), we send two follow-up remainder emails and a final reminder to non-respondents according to Dillman. The market research company invested two months to collect information in a personalized way and to ensure the quality; data was captured in the same online system. In all cases, as an incentive to respond, we promise to provide the participants with an executive summary of the results. Because of this incentive, we have 350 new emails waiting for the results.

Non-response bias Ana

To check for potential non-response bias, online and offline respondents (used as proxies for non-response) were compared across five measures; Using a comparison of the means, no significant differences (p < 0.01) were found between the firm age, size, system amplitude used, and respondent formal education or management experience of online respondent firms and offline firms (non-respondent), suggesting the absence of any obvious non-response bias in this sample (see appendix C part 1). Two normality test (Kolmogorov-Smirnov, Shapiro–Wilk) were performed, the results supporting the normality of all constructs (Appendix C part 2). Two procedures were conducted to establish the validity of constructs and reliability: questionnaire pre-test in three steps (Academic professors, top managers, MBA group); Exploratory Factor Analysis (EFA) to tests convergence and discriminant validity (Appendix B) and all constructs reflect strong validity and reliability (Nunnally, Bernstein, & Berge, 1967). The variables in the model were measured using previously validated scales and all questions were asked using a five-point Likert scale (table 2) (Appendix F shows the survey instrument).

Octubre 2, 3 y 4 de 2013 ◆ Ciudad Universitaria ◆ México, D.F.

ANFECA
Asociación Nacional de Facultades y
Escuelas de Contaduría y Administración

Table 2: Variable measurement

Construct	Source	Dependent & independent variables
MCS uses	27-item scale, adapted version for Henri (2006b) of Vandenbosch (1999)	**Independent:** Monitoring; focusing attention; strategic decision-making; legitimizing
Learning Orient.	4-item scale proposed by (Hult 1998)	**Dependent** One dimension Scale (LO)
Entrepreneurial Oriet.	14-item scale by (Lumpkin et al. 2009)	**Dependent** Five dimensions Scale (EO)
Control var.	System amplitude, firm size (10-50 small; 51-250 medium; > 250 Large), firm age, industry and gender	
Measurements	A higher factor score indicates a more intense MCS use, a more Learning-Entrepreneurial Oriented firm	

A summary of the constructs descriptive statistics and correlations are showing in the appendix D. In this appendix D we can see that learning orientation have a higher mean than entrepreneurial orientation. In the case of MCS uses we can see that Monitoring has the higher factor score indicating a more intense MCS use followed by strategic decision making, legitimizing and focusing attention. In all cases we observe a standard deviation less than unity so we can expect that any company in this sample will have a variation expected for a unit about their arithmetic mean, ie a rating between 2.5 and 4.5 approximately. Thus in general the data shown are grouped around a central value. The response rate was 13.56% of the sample, 644 firms, of which 296 (46%) are large-size with an average of 4,257 employees and 44 years age, 191 (29.7%) medium-size firms with an average of 158 employees and 24 years age and 157 (24.4%) are small-size with an average of 32 employees and 11 years age. The respondents are 79 CEOs (12.3%), 109 divisional-directors (16.9%), 111 department-directors (17.2%) and 345 managers (53.6%). Firms are distributed in four sectors: 105 manufacturing (16.3%), 51 trading (7.9%), 407 services (63.2%) and 81 banking (12.6%).

Analysis models

The methodologies selected are twofold: 1) Analysis of variance (ANOVA) with the control variables (size & industry) as factors and the MCS Uses result of the EFA as dependent variables. 2) Multiple linear regressions, a) full sample in two models (Model A: LO & EO and control variables and Model B: LO & EO, MCS uses and control variables) and to test the robustness of the model, b) Dividing it into sub-groups by size and industry. Statistical analysis was performed using SPSS (V.21).

4. RESEARCH FINDINGS

Table 3: ANOVA analyses between MCS uses, LO & EO versus Size and Industry

MCS uses			Capabilities					
Monitoring			Learning Orientation			Entrepreneurial Orientation		
Differing	Mean (S.D.)	Groups	Differing	Mean (S.D.)	Groups	Differing	Mean (S.D.)	Groups
Size F:7.126 ***	-0.257 (1.155)	Small	Size F:2.757 *	0.141 (0.964)	Small & Medium	Industry F:3.398 **	-0.246 (0.982)	Banking
	0.052 (0.941)	Medium		0.02 (0.996)	Medium & Large		-0.133 (1.083)	& Trade
	0.103 (0.925)	& Large		-0.088 (1.016)	Large		0.014 (0.994)	Services &
							0.200 (0.959)	Manufacturing

Note: N=644 in all cases   Note 1: * Significant @ 90%; ** Significant @ 95%; *** Significant @ 99%   Note 2: All others constructs are not significative

ANOVA results: In the Firm-size analyses regarding MCS uses, the results show that only monitoring use shows significant differences, with two groups: One group of small firms with a mean below the average for the entire group (-0.257) and another group of medium (0.052) and large (0.103) firms. In the Firm-size analyses regarding capabilities, LO results show two groups: Group of small with higher and positive mean (0.141) and group of large firms (-0.088) with a

Octubre 2, 3 y 4 de 2013 ◆ Ciudad Universitaria ◆ México, D.F.

ANFECA
Asociación Nacional de Facultades y
Escuelas de Contaduría y Administración

negative mean, suggesting that smaller companies present greater LO (p<0.10). The Firm-Industry analysis regarding capabilities, show differences in EO between the banks (-0.246) and the manufacturing industry (0.200), suggesting that manufacturing, followed by services firms, have higher EO than trade and banking (p<0.05).

Table 4. Multiple Linear Regressions results

	Learning Orientation		Entrepreneurial Orientation	
	Model A	*Model B*	*Model A*	*Model B*
Variables	*Control variables*	*Control & Independent variables*	*Control variables*	*Control & Independent variables*
Controls				
System amplitude	**0.636***	**0.287***	**0.627***	**0.326***
Firm Small	**0.206**	**0.204**	**0.176*	**0.183*
Firm Large	**-0.192**	-.110	*0.042*	.655
Firm Age	0.001	.000	.002	.133
Ind 1: Manufacturing	0.211	.086	**0.463***	**0.368***
Ind 2: Trade	-0.005	-.058	.098	0.567
Ind 3: Services	0.124	.055	**0.312***	**0.264**
Gender	-.060	-0.046	.003	0.967

Mgmt. Control Use	**MCS use**		**MCS use**	
	Legitimizing	**0.310***	Focusing att.	**0.234***
	Focusing att.	**0.274***	Legitimizing	**0.223***
	Strat. Dec.	**0.185***	Monitoring	**0.168***
	Monitoring	**0.151***	Strat. Dec.	**0.156***

F-value	**10.105***	**23.507***	**10.649***	**17.662***
R^2	**0.113**	**0.309**	**0.118**	**0.251**

N=644; Industry reference: Banking * Sig. @ 90% ** Sig. @ 95% *** Sig. @ 99%
Note 1: Unstandardized Coefficients are reported

Table 5: Hypotheses & results

Hypotheses a (LO)		Hypotheses b (EO)	
H1a (LO vs. monitoring (-))	✗ Not supported	H1b (EO vs. monitoring (-))	✗ Not supported
H2a (LO vs. legitimizing (-))	✗ Not supported	H2b (EO vs. legitimizing (-))	✗ Not supported
H3a (LO vs focusing attention (+))	✓ Supported	H3b (EO vs focusing attention (+))	✓ Supported
H4a (LO vs Strategic decision-making (+))	✓ Supported	H4b (EO vs Strategic decision-making (+))	✓ Supported

MLR results (MCS uses vs. LO & EO): For LO, the MCS use with more impact is legitimizing, followed by Attention Focusing, Strategic Decision-Making and Monitoring. For EO, the MCS use with more impact is Attention Focusing, followed by Legitimizing, Monitoring and Strategic Decision-Making. Both capabilities (LO & EO) are more related with legitimizing and focusing attention uses but Monitoring and Strategic Decisions-Making uses are positive and significant too. Globally, significant and positive relationship is observed for small firms in both capabilities, which can be understood as a higher propensity of small firms to develop both LO & EO. The results show that belonging to manufacturing or service industry, relates in a positive and significant manner with EO. In the complete sample, hypotheses H1 (a&b) and H2 (a&b) in both capabilities are not supported. Although they are positively and significantly related to LO & EO, are contrary to the expected direction (positive instead of the expected negative direction). Hypotheses H3 (a&b) and H4 (a&b) are supported.

MRL sub-group analyses (Size & Industry): To test whether these relationships hold in the same way previously shown, in different company sizes and industry, the multiple regression analysis was repeated but now dividing the sample into subgroups by size and industry. These analyses show results in the same line: H1 a&b and H2 a&b are not supported, although the relationship is positive and significant in most cases. H3 a&b receives complete support for firms of all sizes and all industries with exception of LO-Trade industry where it is not statistically

significant. H4 a&b receives partial support, except for LO-Medium and EO-Small sized firms, LO-Trade firms, EO-Manufacturing and EO-Trade firms where it is not statistically significant. Appendix E shows the hypotheses results of the sub-group (Size & Industry) analyses.

5. IMPLICATIONS AND CONCLUSIONS

In general, the literature in management control systems (MCS) used an explicitly or implicitly RBT approach (Barney, 1991; Teece et al., 1997; Wernerfelt, 1984) and together with levers of control framework (Simons, 1995), shows that MCS influence the strategic capabilities in organizations through the routines they stimulate. Based on the RBV we can see the MCS as available resources in an organization, which generate a competitive advantage in terms of the use made for them (Lengnick-Hall & Wolff, 1999). Therefore, understanding how these systems can be used in a better way, generate a source of sustainable competitive advantage. The general findings of this work are aligned with Simons' (1990) arguments in terms of raising the contribution of MCS over a tool for monitoring and evaluation, and offer them as a catalyst for the complete strategic process, which supports and encourages the creation and execution of strategies across the organization.

The overall results suggest that MCS use as monitoring shows significant differences between small and Medium-large companies, being large companies that make more use of their MCS in a monitoring way. Small firms have a greater propensity to learn (p<0.10) than large companies and even more, the negative coefficient in large companies suggests an inverse relationship between the size and orientation to learning. Manufacturing, followed by services firms, have higher entrepreneurial orientation than trade and banking (p<0.05) firms.

The four MCS uses contribute positively to capabilities and highlight a positive impact of diagnostic use (Monitoring and Legitimizing) on capabilities, contrary to the expected direction identified in previous studies (Henri, 2006a). We can identify positions for and against this relationship. Some authors (Grafton, Lillis, & Widener, 2010) argues that diagnostic use of MCS facilitates exploitation of existing capabilities and in the same line, Vandenbosch (1999) argued that the discussion triggered by the diagnostic use leads to corrective action as a way of learning, but Henri (2006a) argues that corrective actions are not sufficient to sustain such capabilities. This would mean that in theory, even if diagnostic use works against the deployment of capabilities, it may contribute to performance through organizational capabilities. Therefore by providing the necessary information, diagnostic use of MCS could help to increase the positive effects of an interactive use on capabilities. Therefore, further research should be developed to have a better understanding of these relationships.

Under the conceptualization that "what is not measured, is not controlled" (Kaplan & Norton, 1992), MCS use as monitoring, is a necessary condition, but not sufficient to generate a capability. Necessary condition for providing the information to challenge the context, the content and validity of the strategy followed by firms, by translating the strategy into deliverables and measures, helps managers to measure and ensure business (Hall, 2008). Executives in organizations often use MCS´s not only to confirm or deny their own prior beliefs (justify decisions), also to legitimizing prior ideas ensuring their interpretation influencing and guide decision-making processes (Vandenbosch, 1999).

Other possible explanation for our results could emerge from the context in which our research was conducted. Mexico is a newly developed country and has the characteristics of an emergent economy. This has implications for example, competition is at an early stage and companies

Octubre 2, 3 y 4 de 2013 ◆ Ciudad Universitaria ◆ México, D.F.

ANFECA
Asociación Nacional de Facultades y
Escuelas de Contaduría y Administración

mostly use traditional MCS in a diagnostic way. They face the challenge to know how to use a MCS in an interactive manner.

6. LIMITATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

Although we used valid measures and empirical results indicate that the instrument used is a reliable, future research could refine and further validate the instrument. The results were obtained through a survey, and using the survey method to collect data creates the potential for bias due to common response.

Previous research indicates mixed (+/-) results in the MCS-capabilities relationship, thus future research could retest the meaning of these relationships in other contexts or contextual factors like the uncertainty perception, the measurement diversity or human capital factors, as the results shown so far cannot be conclusive. This study focused on evaluating the impact of MCS in only two capabilities, therefore how other strategic orientations may be impacted by the MCS uses can be developed.

Octubre 2, 3 y 4 de 2013 ◆ Ciudad Universitaria ◆ México, D.F.

ANFECA
Asociación Nacional de Facultades y
Escuelas de Contaduría y Administración

6. APPENDIX

Appendix A: Data in the directory DENUE México 2012

Identification of the economic unit		
• Name of the economic unit • Economic name • Stratum of employed persons *	• Class code and description of activity * • Type of economic unit • Mailing address or geographic	• Phone number • E-mail
* Determined by the INEGI		

Appendix B: Convergent and discriminant validity
Exploratory factor Analysis

Exploratory Factor Analysis across all items in MCS uses (27)				
Rotated Component Matrix (a)				
	Component			
	1	2	3	4
L9	0.749			
L4	0.745			
L6	0.744			
L5	0.741			
L8	0.714			
L7	0.682			
L3	0.668			
L2	0.655			
L1	0.631			
D3		0.749		
D5		0.746		
D4		0.733		
D2		0.680		
D6		0.660		
D7		0.643		
D1		0.571		
F4			0.722	
F5			0.701	
F6			0.666	
F7			0.637	
F2			0.616	
F1			0.616	
F3			0.521	
M2				0.791
M3				0.790
M1				0.787
M4				0.698

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Norm.
a. Rotation converged in 6 iterations.

Exploratory Factor Analysis across all items in MCS uses (27)		
KMO	KMO	0.956
Bartlett's Test of Sphericity	Chi-Square	11860
	df	351
	Sig.	0.000
Cronbach's Alpha	C. A.	0.958
	N of Items	27

EFA all Capabilities items (18)		
Rotated Component Matrix		
	Component	
	1	2
EO1	0.853	
EO3	0.849	
EO2	0.840	
EO5	0.836	
EO8	0.818	
EO7	0.813	
EO6	0.808	
EO11	0.806	
EO13r	0.803	
EO12	0.798	
EO10	0.791	
EO14r	0.790	
EO4r	0.785	
EO9	0.772	
LO1		0.838
LO2		0.816
LO4		0.778
LO3		0.722

Extraction Method:
Principal Component Analysis.
Rotation Method:
Varimax with Kaiser Normalization.
a. Rotation converged in 3 iterations.

EFA all Capabilities items (18)		
KMO	KMO	0.961
Bartlett's Test of Sphericity	Chi-Square	9884
	df	153
	Sig.	0.000
Cronbach's Alpha	C.A.	0.952
	N of Items	18

Octubre 2, 3 y 4 de 2013 ◆ Ciudad Universitaria ◆ México, D.F.

ANFECA
Asociación Nacional de Facultades y
Escuelas de Contaduría y Administración

Appendix C: Non-response bias analyses and test of normality

Part 1: Non-response analysis

variables		N	Descriptives Mean	Std. Dev.	Anova F	Sig.
Firm age	online	323	30.55	29.55	0.005	0.942
	offline	321	30.39	27.24		
	Total	644	30.47	28.40		
# employees	online	323	1979.43	4809.30	0.03	0.862
	offline	321	2043.45	4494.06		
	Total	644	2011.34	4651.33		
Repondent Formal Management Education	online	323	3.16	2.60	0.779	0.378
	offline	321	3.34	2.72		
	Total	644	3.25	2.66		
Respondent Management Experience	online	323	7.99	6.59	0.194	0.66
	offline	321	7.76	6.52		
	Total	644	7.87	6.55		
System amplitude used	online	323	0.52	0.500	2.25	0.134
	offline	321	0.46	0.499		
	Total	644	0.49	0.500		

Note: N=644 in all cases

Note 1: ** Significant at the 95% level; *** Significant at the 99% level

Part 2: Test of normality

Tests of Normality

Factors	Kolmogorov-Smirnov[a] Statistic	df	Sig.	Shapiro-Wilk Statistic	df	Sig.
FAC_L	.049	644	.001	.978	644	.000
FAC_D	.036	644	.046	.992	644	.001
FAC_F	.036	644	.049	.995	644	.039
FAC_M	.075	644	.000	.961	644	.000
FA_LO	.125	644	.000	.915	644	.000
FA_EO	.092	644	.000	.958	644	.000

a. Lilliefors Significance Correction

Appendix D: Constructs descriptive statistics and correlations

	Capabilities Learning Orient.	Entrep. Orient.	MCS use Monitoring	Legitimizing	Focusing Attention	Strategic Decision
Descriptive Statistics (average)						
Mean (Avg)	3.709	3.457	4.012	3.367	3.216	3.488
Standard deviation	1.113	1.034	.935	.941	.936	.902
Median	4.000	3.643	4.250	3.444	3.286	3.571
Factor Analysis	FA_LO	FA_EO	FAC_M	FAC_L	FAC_F	FAC_D
No. Items	4	14	4	7	7	9
KMO	.781	.966	.956	.956	.956	.956
Approx. Chi-Square	983	8715	11860.289	11860.289	#######	#######
Bartlett's Test Spher. (sig.)	.000	.000	.000	.000	.000	.000
Cronbach's Alpha	.826	.967	.958	.958	.958	.958
Correlation matrix (pearson)						
FA_LO Learning Orientation	1.000					
FA_EO Entrepreneurial Orientation	.450**	1.000				
FAC_M (monitoring)	.164**	.195**	1.000			
FAC_L (legitimizing)	.336**	.250**	.000	1.000		
FAC_F (focusing attention)	.306**	.274**	.000	.000	1.000	
FAC_D (Strategic decisions)	.215**	.194**	.000	.000	.000	1.000

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

N= 644

Octubre 2, 3 y 4 de 2013 ◆ Ciudad Universitaria ◆ México, D.F.

ANFECA
Asociación Nacional de Facultades y
Escuelas de Contaduría y Administración

Appendix E: Hypotheses results of the sub-group (Size & Industry) analyses

	HYPOTHESES BY SIZE								HYPOTHESES BY INDUSTRY							
			Hypotheses a: Learning Orientation LO								Hypotheses a: Learning Orientation LO						
	All sample		BIG		Medium		SMALL		MANUFACTURING		TRADE		SERVICES		BANKING	
	Hyp.	Coeff.	Hyp.	Coeff.	Hyp.	Coeff.	Hyp.	Coeff.	Hyp.	Coeff.	Hyp.	Coeff.	Hyp.	Coeff.	Hyp.	Coeff.
H1a Monitoring	✗	0.151***	✗	0.252***			✗	0.129**	✗	0.307***	✗	0.290**	✗	0.11**		
H2a Legitimizing	✗	0.310***	✗	0.274***	✗	0.400***	✗	0.297***	✗	0.286***	✗	0.465***	✗	0.299***	✗	0.355***
H3a Focusing att.	✓	0.274***	✓	0.291***	✓	0.238***	✓	0.280***	✓	0.386***			✓	0.282***	✓	0.274***
H4a Strat. Dec. Mak.	✓	0.185***	✓	0.225***			✓	0.266***	✓	0.229***			✓	0.157***	✓	0.284***
R square		0.309		0.347		0.280		0.293		0.447		0.290		0.295		0.276
F		23.507		30.830		24.274		15.754		16.017		9.826		27.839		9.773
F Sig.		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000

	All sample		BIG		Medium		SMALL		MANUFACTURING		TRADE		SERVICES		BANKING	
			Hypotheses b: Entrepreneurial Orientation LO								Hypotheses b: Entrepreneurial Orientation EO						
	Hyp.	Coeff.	Hyp.	Coeff.	Hyp.	Coeff.	Hyp.	Coeff.	Hyp.	Coeff.	Hyp.	Coeff.	Hyp.	Coeff.	Hyp.	Coeff.
H1b Monitoring	✗	0.168***	✗	0.115**	✗	0.238***	✗	0.151***	✗	0.255***			✗	0.205***		
H2b Legitimizing	✗	0.223***	✗	0.219***	✗	0.329***	✗	0.178***			✗	0.326***	✗	0.236***	✗	0.377***
H3b Focusing att.	✓	0.234***	✓	0.154***	✓	0.340***	✓	0.327***	✓	0.268***	✓	0.256**	✓	0.257***	✓	0.248**
H4b Strat. Dec. Mak.	✓	0.156***	✓	0.212***	✓	0.203***							✓	0.153***	✓	0.400***
R square		.251		0.220		0.245		0.288		0.271		0.416		0.204		0.395
F		17.662		16.322		15.093		15.368		12.524		11.138		25.689		12.400
F Sig.		.000		.000		.000		.000		0.000		0.000		0.000		0.000
N=		644		296		191		157		105		51		407		81

Note: * Sig. at 90% level; ** Sig. at 95% level; *** Sig. at 99% level

Are not significant

Appendix F: Survey instrument.

A: Management Control Systems: (1=never used, 2=used rarely, 3=sometimes used, 4=often used, 5=always used)

In my company we use Management Control Systems in order to:

1. **Monitoring:**
   ___ 1.1 track progress towards goals.
   ___ 1.2 review key measures.
   ___ 1.3 monitor results.
   ___ 1.4 compare outcomes to expectations.
2. **Attention-focusing:**
   ___ 2.1 tie the organization together.
   ___ 2.2 enable the organization to focus on common issues.
   ___ 2.3 enable the org. to focus on your critical success factors..
   ___ 2.4 develop a common vocabulary in the organization.
   ___ 2.5 provide a common view of the organization.
   ___ 2.6 enable discussion in meetings of superiors, subordinates and peers.
   ___ 2.7 enable continual challenge and debate underlying results, assumptions and action plans.
3. **Strategic decision-making:**
   ___ 3.1 make strategic decisions once the need for a decision is identified, and an immediate response is required.
   ___ 3.2 make strategic decisions once the need for a decision is identified, and an immediate response is not required.

___ 3.3 make decisions when it is difficult to differentiate among plausible solutions to a problem because each has good arguments.
___ 3.4 to make decisions when encountering a problem that is unstructured and has not been encountered before.
___ 3.5 make decisions when you have been recently faced with a similar decision.
___ 3.6 to anticipate the future direction of the company, as opposed to responding to an identifiable problem.
___ 3.7 to make a final decision on a strategic issue of major importance.

4. **Legitimization:**
   ___ 4.1 confirm your understanding of the business.
   ___ 4.2 justify decisions.
   ___ 4.3 verify assumptions.
   ___ 4.4 maintain your perspectives.
   ___ 4.5 support your actions.
   ___ 4.6 reinforce your beliefs.
   ___ 4.7 stay close to the business.
   ___ 4.8 increase your focus.
   ___ 4.9 validate your point of view.

Comprehensive Management Control System
Please indicate with an "X", which of the following two options representing more the Management Control Systems in your company:
6.1 The systems capture the key performance areas of the business units, providing a comprehensive overview of they.
6.2 The systems cover some, but not all, of the key performance areas of the business units, offering a partial view of they.

Learning Orientation How it describes your organization. (Where 1 = not describe it; .... 5 = fully described)

___ 7.1 Learning is the key to improvement

___ 7.2 Basic values include learning as a key to improvement

___ 7.3 Once we quit learning we endanger our future.

___ 7.4 Employee learning is an investment, not an expense.

Entrepreneurial Orientation Please indicate on each line which it describes your organization.

___ 8.1 In general, we have a strong emphasis on research and development of new products or services, rather than on the marketing of products that the market already knows.

___ 8.2 During the past 5 years, we have sold many new products or services.

___ 8.3 In recent years, changes in product lines or services that we offer have been steady and significant.

___ 8.4 Our company, rather than having pioneered actions in the market, typically responds to actions which competitors have begun.–

___ 8.5 Often we are the first to introduce new products or services, new management techniques or operating technologies.

___ 8.6 Our company typically takes strong measures to "overcome" competitors, rather than taking a more "live and let live" posture.

___ 8.7 In general, in the company tend to take high-risk projects with high probability profit rates, instead of low-risk projects with normal benefits.

___ 8.8 In general, we believe in great changes, bold and quick to achieve the objectives of the company, rather than small changes, shy and slow.

___ 8.9 When confronted with decision-making situations involving uncertainty, usually adopt an aggressive stance to exploit opportunities rather than seeking positions prudent decisions avoid costly.

___ 8.10 The company is supporting the efforts of individuals and / or teams that operate autonomously, more than require senior management to guide its work.

___ 8.11 In our company we believe that the best results occur when individuals / teams decide for themselves the opportunities to follow, rather than when they are driven by senior managers in the pursuit of these opportunities.

___ 8.12 In search of opportunity, people / teams make decisions on their own without referring constantly to his supervisor, more than expected to get approval before taking such decisions.

___ 8.13 The CEO and his management team play the most important role in the identification and selection of opportunities rather than the ideas and initiatives of employees. –

___ 8.14 In my business "not" make a special effort to win a business competition. –

Octubre 2, 3 y 4 de 2013 ◆ Ciudad Universitaria ◆ México, D.F.

15

ANFECA
Asociación Nacional de Facultades y
Escuelas de Contaduría y Administración

7. REFERENCES

Ahn, H. (2001). Applying the balanced scorecard concept: an experience report. *Long Range Planning*, *34*(4), 441–461.

Anthony, R. N. (1965). *Planning and Control Systems: A Framework for analysis*. Cambridge, MA: Graduate School of Business Administration, Harvard University.

Baker, W. E., & Sinkula, J. M. (1999). The Synergistic Effect of Market Orientation and Learning Orientation on Organizational Performance. *Academy of Marketing Science*, *27*(4), 411–427. doi:10.1177/0092070399274002

Barney, J. (1991). Firm Resources and sustained Competitive Advantage. *Journal of Management*, *17*(1), 99–120.

Barney, J. B., Ketchen, D. J., & Wright, M. (2011). The Future of Resource-Based Theory: Revitalization or Decline? *Journal of Management*, *37*(5), 1299–1315. doi:10.1177/0149206310391805

Berry, A. J., Coad, A. F., & Harris, E. P. (2009). Emerging themes in management control: A review of recent literature. *The British Accounting Review*, *41*(1), 2–20. doi:10.1016/j.bar.2008.09.001

Bisbe, J., & Otley, D. (2004). The effects of the interactive use of management control systems on product innovation. *Accounting, Organizations and Society*, *29*, 709–737. doi:10.1016/j.aos.2003.10.010

Chenhall, R. (2005). Integrative strategic performance measurement systems, strategic alignment of manufacturing, learning and strategic outcomes: an exploratory study. *Accounting, Organizations and Society*, *30*, 395–422. doi:10.1016/j.aos.2004.08.001

Covin, J. G., & Lumpkin, G. T. (2011). Entrepreneurial Orientation theory and research: reflections on a needed construct. *Entrepreneurship Theory and Practice*, *35*(5), 855–872. doi:10.1111/j.1540-6520.2011.00482.x

Covin, J. G., & Slevin, D. P. (1989). Strategic management of small firms in hostile and benign environments. *Strategic Management Journal*, *10*(1), 75–87.

Cruz, I., Scapens, R. W., & Major, M. (2011). The localization of a global management control system. *Accounting, Organizations and Society*, *36*(7), 412–427. doi:10.1016/j.aos.2011.08.001

Day, G. S. (1994). The capabilities of market-driven organizations. *Journal of Marketing*, *58*(4), 37–52.

Dillman, D. (2000). *Mail and Internet Surveys: The Tailored design method*. New York: John Wiley and Sons, Inc.

Eisenhardt, K.M., 1989. Building Theories From Case Study Research. The Academy of Management Review, 14(4), p.532.

Eisenhardt, K. M., & Jeffrey, M. (2000). Dynamic Capabilities: What are they? *Strategic Management Journal*, *21*, 1105–1121.

Fiol, C. M., & Lyles, M. A. (1985). Organizational Learning. *The Academy of Management Review*, *10*(4), 803–813.

Godener, A., & Söderquist, K. E. (2004). Use and impact of performance measurement results in R&D and NPD: an exploratory study. *R&D Management*, *34*(2), 191–219. doi:10.1111/j.1467-9310.2004.00333.x

Grafton, J., Lillis, A. M., & Widener, S. K. (2010). The role of performance measurement and evaluation in building organizational capabilities and performance. *Accounting, Organizations and Society*, *35*(7), 689–706. doi:10.1016/j.aos.2010.07.004

Grant, R. M. (1996). Toward a Knowledge-based theory of the firm. *Strategic Management Journal*, *17*(Special Issue), 109–122.

Hall, M. (2008). The effect of comprehensive performance measurement systems on role clarity, psychological empowerment and managerial

16

Octubre 2, 3 y 4 de 2013 ◆ Ciudad Universitaria ◆ México, D.F.

performance. *Accounting, Organizations and Society*, *33*(2-3), 141–163. doi:10.1016/j.aos.2007.02.004

Henri, J.-F. (2006a). Management control systems and strategy: A resource-based perspective. *Accounting, Organizations and Society*, *31*(6), 529–558. doi:10.1016/j.aos.2005.07.001

Henri, J.-F. (2006b). Organizational culture and performance measurement systems. *Accounting, Organizations and Society*, *31*(1), 77–103. doi:10.1016/j.aos.2004.10.003

Hitt, M. A., Ireland, R. D., & Hoskisson, R. E. (2011). *Strategic Management: Competitiveness and Globalization (Concepts and Cases)* (9 ed.). Mason, OH: Prentice Hall.

Hoskisson, R. E., Hitt, M. A., Wan, W. P., & Yiu, D. (1999). Theory and research in strategic management: Swings of a pendulum. *Journal of Management*, *25*(3), 417–456.

Hurley, R. F., & Hult, G. T. M. (1998). Innovation, Market Orientation, and Organizational Learning: An Integration and Empirical Examination. *Journal of Marketing*, *62*(3), 42.

Ittner, C.D., Larcker, D.F. & Randall, T., 2003. Performance implications of strategic performance measurement in financial services firms. Accounting, Organizations and Society, 28(7-8), pp.715–741.

Kaplan, R., & Norton, D. (1992). The Balanced ScoreCard- Measures that drive performance. *Harvard Business Review*, *January-February*, 1–28.

Langfield Smith, K., 1997. Management Control Systems and Strategy: a critical review. Accounting, Organizations and Society, 22(2), pp.207–232.

Lengnick-Hall, C. A., & Wolff, J. A. (1999). Similarities and contradictions in the core logic of three strategy research streams. *Strategic Management Journal*, *20*(12), 1109–1132.

Lumpkin, G. T., Cogliser, C. C., & Schneider, D. R. (2009). Understanding and Measuring Autonomy: An Entrepreneurial Orientation Perspective. *Entrepreneur Theory And Practice*, *January*, 47–69.

Lumpkin, G., & Dess, G. G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of Management Review*, *21*(1), 135–172.

Marginson, D.E.W., 2002. Management control systems and their effects on strategy formation at middle-management levels: evidence from a U.K. organization. Strategic Management Journal, 23(11), pp.1019–1031.

Mellahi, K. & Sminia, H., 2009. Guest Editors' Introduction: The frontiers of strategic management research. International Journal of Management Reviews, 11(1), pp.1–7.

Mintzberg, H. (1978). Patterns in Strategy Formation. *Management Science*, *24*(9), 934–948.

Mintzberg, H. (1994). The fall and rise of strategic planning. *Harvard Business Review*, *72*(Jan-Feb), 107–114.

Mintzberg, H., & Waters, J. A. (1985). Of strategies, deliberate and emergent. *Strategic Management Journal*, *6*(3), 257–272.

Mundy, J., 2010. Creating dynamic tensions through a balanced use of management control systems. Accounting, Organizations and Society, 35(5), pp.499–523.

Navarro, A.M. & Guerras Martín, L.A., 2001. El proceso de toma de decisiones estratégicas en las principales revistas internacionales (1994-2000). In XI Congreso nacional de ACEDE, Universidad de Zaragoza. Zaragoza, España, pp. 1–25.

Neely, A., Mills, A. & Platts, J., 1994. Realizing strategy through measurement. International Journal of Operations & Production Management, 14(3), pp.140–152.

Nunnally, J. C., Bernstein, I. H., & Berge, J. (1967). *Psychometric theory* (2nd ed., Vol. 2). New York: McGraw-Hill.

Penrose, E. T. (1995). *The Theory of the Growth of the Firm* (2nd ed.). New York: oxford University Press.

Porter, M. E. (1980). *Competitive Strategy: Techniques for Analyzing Industries and Competitors*. New York, NY: The free press.

Pun, K.F. & White, A.S., 2005. A performance measurement paradigm for integrating strategy formulation: A review of systems and frameworks. International Journal of Management Reviews, 7(1), pp.49–71.

Ripollés, M., & Blesa, A. (2005). Relación entre la orientación al mercado y la orientación emprendedora: su influencia en el rendimiento de la empresa. *Revista europea de dirección y economía de la empresa*, *14*(3), 165–180.

Rumelt, R. P., Schendel, D., & Teece, D. J. (1991). Strategic Management and Economics. *Strategic Management Journal*, *12 Winter* (Special issue: Fundamental research issues in Strategy and Economics), 5–29.

Simon, H., Guetzkow, H., & Kometsky, G. (1954). *Centralization vs. Decentralization in in Organizing the Controller's Department, Controllership Foundation*. New York, NY: Controllership foundation, Inc.

Simons, R. (1990). The role of management control systems in creating competitive advantage: New perspectives. *Accounting, Organizations and Society*, *15*(1/2), 127–143.

Simons, R. (1991). Strategic orientation and top management attention to control systems. *Strategic Management Journal*, *12*(1), 49–62.

Simons, R. (1995). *Levers of control: how managers use innovative control systems to drive strategic renewal* (Vol. Boston, MA). Harvard Business Press.

Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic Capabilities and Strategic Management. *Strategic Management Journal*, *18*(7), 509–533.

Vandenbosch, B. (1999). An empirical analysis of the association between the use of executive support systems and perceived organizational competitiveness. *Accounting, Organizations and Society*, *24*(1), 77–92. doi:10.1016/S0361-3682(97)00064-0

Wernerfelt, B. (1984). A Resource-Based View of the Firm. *Strategic Management Journal*, *5*(2), 171–180.

Widener, S. K. (2007). An empirical analysis of the levers of control framework. *Accounting, Organizations and Society*, *32*(7-8), 757–788.

Zahra, S. A., & Garvis, D. M. (2000). International corporate entrepreneurship and firm performance: The moderating effect of international environmental hostility. *Journal of Business Venturing*, *15*(5-6), 469–492. doi:10.1016/S0883-9026(99)00036-1

Octubre 2, 3 y 4 de 2013 ◆ Ciudad Universitaria ◆ México, D.F.

18