

**015-0028**

**Shaping business value of information technology through innovation-supportive  
culture**

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**POMS 21<sup>st</sup> Annual Conference: Operations in emerging economies**

**Vancouver, Canada**

**May 7 to May 10, 2010**

## **Abstract (015-0028)**

This paper analyzes the relationships between two types of information technology (IT) resources (technological IT and managerial IT resources), the organizational capability of innovation-supportive culture and firm market performance. A proposed research model and hypotheses are tested using cross-sectional survey data from a sample of 203 leading Spanish firms. Data analysis using the partial least squares technique shows that: (1) Innovation-supportive culture is a valuable capability that predicts firm market performance, (2) both technological and managerial IT resources have a positive effect on the development of a culture that supports innovation in the firm, and (3) investment in both technological IT and managerial IT resources influences firm market performance positively by means of the capability of innovation-supportive culture. This study provides a better understanding of how technological IT and managerial IT resources influence innovation-supportive culture positively to affect market performance.

## **1. Introduction**

Investment in innovation has become a strategic imperative for firms that wish to compete successfully in their sector. Given the importance attributed to information technology (IT) resources in facilitating firm innovation (Ramiller & Swanson 2003, Tarafdar & Gordon 2007), we note that the relationships between IT resources, firm innovation and performance are an important and valuable research topic for both scholars of business value of IT and IT and business practitioners. Firms such as Banco Sabadell, one of the four largest Spanish entrepreneurial banking groups, provide an

example of how the deployment of IT-based resources can develop an innovation capability that can help the firm to gain advantage over competitors.

Operations Management (OM) and Information Systems (IS) literatures have traditionally shown contradictory results regarding the impact of the IT construct on firm performance (e.g., Sircar et al. 2000, Benitez-Amado 2009). However, the most recent literature on the business value of IT seems to have explained these relationships through the so-called IT-enabled organizational capabilities perspective (Rai et al. 2006). From this perspective, IT has an indirect, not a direct, impact on firm performance through higher-order process capabilities. Thus, IT plays a key role in shaping other organizational capabilities that create performance gains for firms, such as new product development (NPD) dynamic capabilities and NPD functional competences (Pavlou & El Sawy 2006) and supply chain integration capabilities (Rai et al. 2006).

In recent years, the interface between IT and firm innovation has received considerable attention in the OM and IS literatures (e.g., Ramiller & Swanson 2003). IT resources have been discussed as a driving force in firm innovation, in terms of both process innovation and product innovation (Tarafdar & Gordon 2007). Research on business value of IT-enabled innovation culture remains sparse, however, despite that fact that there is a pressing need to invest in an innovation culture to compete successfully in the current scenario of hypercompetition.

Innovation-supportive culture is conceptualized in this paper as the firm's ability to develop a working environment that encourages innovation and entrepreneurship (Chandler et al. 2000). As pointed out by Khazanchi et al. (2007), for a firm to be innovative, it must form its organizational culture to achieve the goal of innovating constantly. Specifically, innovation-supportive culture is a major determinant of innovation in the firm. That is, the firms that are able to develop a working environment that supports innovation are those most likely to achieve a higher number of process and product innovations (Ou et al. 2007, Xin & Shi 2007). Thus, it is plausible to assume that a desire to innovate must precede the innovation itself (Mohamed & Qin 2008). To best of our knowledge, little has been done to understand the relationship between IT resources and innovation-supportive culture. Due to the lack of research on the role of IT as an enabler of the innovation-supportive culture, the role of this culture in business value of IT is also unclear.

Drawing on the emerging IT-enabled organizational capabilities perspective (Rai et al. 2006), resource-based theory and dynamic capabilities theory, we address these knowledge gaps by answering the following research questions: (1) What is an innovation-supportive culture? (2) Is innovation-supportive culture a rare and valuable capability that helps firms to improve their firm market performance? (3) What are the IT resources that enable innovation-supportive culture? (4) Do IT resources influence firm market performance by means of the capability of innovation-supportive culture?

This paper is structured as follows. The next section defines the key constructs and develops the hypotheses and the proposed research model. We then present the research methodology, a section on results and analyses and a final section on conclusions.

## 2. Hypothesis development and proposed research model

Figure 1 presents our proposed research model.

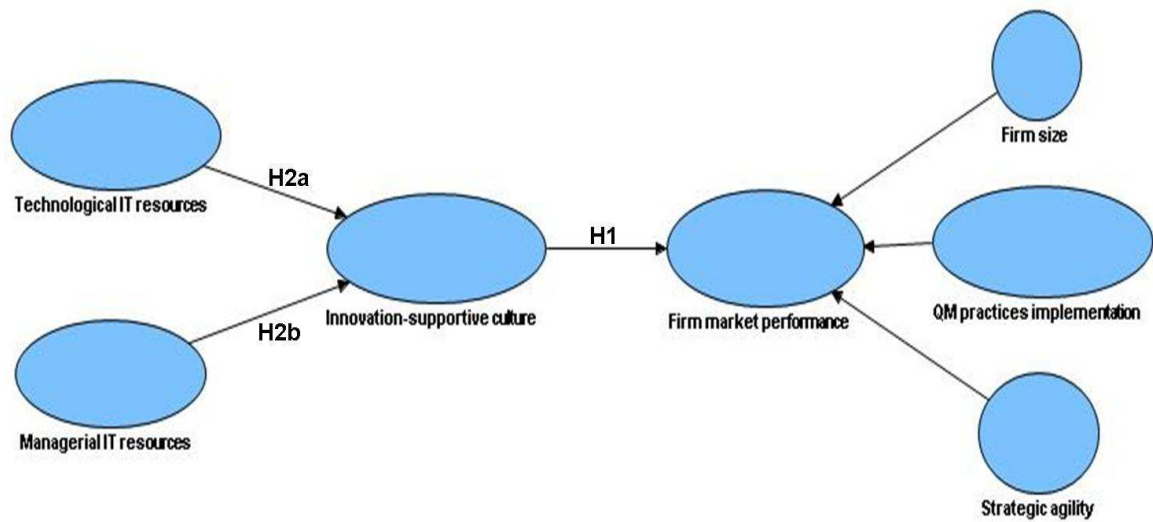


Figure 1: Proposed research model<sup>1</sup>

### 2.1. Innovation-supportive culture and firm performance

We chose firm market performance as the dependent variable for this study. Firm market performance indicates the degree to which one firm is superior to its competition both in terms of sales growth and market share of its main products and markets and in terms of product and market development (Murray & Kotabe 1999, Molina et al. 2007). One definition of organizational culture is “the collective programming of the mind which distinguishes the members of one organization from another” (Hofstede 1991, p.

<sup>1</sup> Note: QM: Quality management.

262). Hence, there may be differences in culture from one firm to another that are caused by the different resources, managerial practices and decisions made by each firm (Chandler et al. 2000). The organizational capability of innovation-supportive culture is defined as the ability of a firm to develop a working environment that encourages innovation and entrepreneurship (Chandler et al. 2000). In this context, new ideas, innovations, work practices, procedures, products or processes are forged and put into practice. Consistent with the above arguments, we may also consider that differences in innovation-supportive culture occur between firms because firms possess or control different resources and/or because resources are managed differently.

Research has proposed that organizational culture is a capability that becomes a source of sustained competitive advantage (Barney 1986). Similarly, firms and Strategy and Entrepreneurship literature are increasingly recognizing the importance of firm innovation as a core capability that enables firms to be successful and competitive (Afuah 1998). We believe that firms that are able to develop an innovation-supportive culture should be in a better competitive position within the sector and should have higher firm market performance. Firms that are able to develop an innovation-supportive working environment enable their IT and/or business employees to develop new ideas, innovations, products or processes more freely and easily. Employees can make suggestions related to improvements in product quality, new product ideas, new ways to save money, new marketing ideas or new procedures that better capture the attention of customers. Insofar as such suggestions and innovations provided by employees are put into practice through specific actions, they will have direct repercussions for sales in the firm's products and markets and thus ultimately for the

firm's market share. Specifically, it is likely that firms that make it easier for employees to develop new ideas will also develop process and product innovations more easily. In turn, firms that launch new products and/or improve existing products will achieve greater sales growth and become market leaders (Thornhill 2006). Hence, it is hypothesized that:

H1: The organizational capability of innovation-supportive culture has a positive effect on firm market performance.

## **2.2. IT-enabled innovation-supportive culture: The effect of IT resources on innovation-supportive culture**

From a resource-based theory, the IT construct can be defined in terms of IT-based resources, the importance of which is emphasized in the IS literature (Bharadwaj 2000, Ray et al. 2005). According to Melville et al. (2004), we can classify IT resources into technological IT resources and managerial IT resources. This classification is consistent with the prior classifications of Ross et al. (1996) and Bharadwaj (2000). Although these researchers have proposed that the three main types of IT resources are technological IT resources, human IT resources and IT-enabled intangible resources, our paper focuses on technological IT resources and managerial IT resources (a type of human IT resource), and on their relationships to the capability of innovation-supportive culture and firm market performance. Technological IT resources indicate the physical resources associated with IT, including both IT infrastructure (i.e., shared technology and technology services across the firm) and specific business applications that utilize the infrastructure (e.g., purchasing systems, sales analysis tools, email systems, Intranet

applications, Internet applications). Technological IT resources thus include hardware, software, databases, applications and networks (Melville et al. 2004, Ray et al. 2005). Managerial IT resources refer to IT managers' skills in identifying and supporting IT-based projects, allocating the appropriate resources, restructuring work processes to take advantage of IT opportunities (Byrd & Davidson 2003), collaborating with business managers to implement business practices (Mata et al. 1995, Van der Heijden 2001, Bassellier & Benbasat 2004, Ray et al. 2005), and leading and motivating development teams to complete projects according to specifications and within time and budgetary constraints (Melville et al. 2004).

We believe that, in addition to other investments in business resources, firms need significant investment in IT resources (technological IT resources and managerial IT resources) to develop an innovation-supportive culture, as IT resources have been considered to be key enablers of firm innovation (Tarafdar & Gordon 2007). IT resources such as technological IT resources can enable a firm to improve its ability to develop a working environment that encourages innovation. Organizational encouragement, a sufficient level of resources and freedom have been identified as some of the stimulants of creativity (Amabile et al. 1996, Chandler et al. 2000). It is thus probable that employees who have resources such as software, databases, applications or email systems will perceive that their firm supports innovation and will exhibit innovative behaviour (Chandler et al. 2000). Similarly, IT could empower IT and/or business employees (Martinsons 1995), leading employees to perceive that they possess greater freedom. Investments in IT can enable IT and/or business employees to access information and to collaborate with other workers and departments in the firm in

ways that they have not previously interacted. This enables employees more easily to develop new ideas to improve existing product quality, to develop more effective commercial techniques to reach target clients and ways to eliminate inefficient work routines, to improve the efficiency of tasks, to cut costs (Chen & Tsou 2007), etc. Employees can use IT applications such as information management and business intelligence to access past innovation projects. Information about these projects can help employees learn from previous experiences (Chen & Tsou 2007) and develop new ideas from this learning process. Internet applications can help the firm to deliver products to customers in a new way or offer additional services (Koellinger 2008). Further, an increase in the technological IT resources possessed by the firm can increase the possibilities open to it and the set of resources with which employees can innovate, also increasing the possibility of employee innovation (Vermeulen & Dankbaar 2002).

Finally, it is likely that the most innovative firms will be those that invest more in IT infrastructure and in specific IT applications. Thus, firms like Telefónica (a Spanish telecommunications firm) or Iberdrola (an electric company, also Spanish), whose intensive investment in IT is well-known, have been included in the most recent ranking of “The 50 Most Innovative Companies” prepared by *BusinessWeek*. Whereas Telefónica leverages its IT resources to innovate in its business model, Iberdrola invests heavily in IT to innovate in the area of customer experience. Hence, it is hypothesized that:

H2a: Technological IT resources have a positive effect on the development of an innovation-supportive culture in the firm.

Because firms with better managerial IT resources will be more innovative than firms following other kinds of resource-based strategies (Saleh & Wang 1993), we believe it is likely that there is a positive association between the deployment of managerial IT resources and the development of an innovation-supportive culture in the firm. Research has associated creativity-supportive cultures with supervisory encouragement and level of sufficient resources (Amabile et al. 1996) as well as managerial resources and human resources practices (Chandler et al. 2000). Employees should perceive that managers support and help them to discover and solve problems (Chandler et al. 2000). This effect influences both business and IT managers. Thus, it is not sufficient for the firm to invest in technological IT resources; it should also have managers with valuable IT management skills who are able to generate and develop a working environment that supports innovation. IT managers should play a key role in the continuous transformation of the business to generate a context in which new innovations are developed and new clients constantly attracted. Specifically, it is likely that an innovation culture will develop more easily if the IT managers ensure adequate funding of IT research and development—such that IT professionals can perform innovations in IT—and motivate IT professionals properly. Finally, an innovation-supportive culture will also be implemented more easily to the extent that IT managers collaborate with business managers to implement innovative practices in the firm. Hence, it is hypothesized that:

H2b: Managerial IT resources have a positive effect on the development of an innovation-supportive culture in the firm.

### **2.3. Shaping business value of IT through innovation-supportive culture**

One of the long-standing debates among scholars is whether IT influences firm performance directly or indirectly (Benitez-Amado 2009). This research is consistent with the perspective of IT-enabled organizational capabilities, according to which IT impacts firm performance positively and indirectly through higher-order process capabilities. Prior literature has found that organizational capabilities such as knowledge management (Tanriverdi 2005) and supply chain integration (Rai et al. 2006), among others, fully mediate in the IT-firm performance interface. Taking into account the importance attributed to the IT resources in shaping firm innovation capabilities (Tarafdar & Gordon 2007), the fact that innovation-supportive culture has been proposed as a capability that can generate business value (Chandler et al. 2000, Thornhill 2006) and the fact that organizational culture is a complementary organizational resource that could mediate in the generation of IT business value (Melville et al. 2004), we propose that the impact of technological IT and managerial IT resources on firm market performance is mediated by the organizational capability of innovation-supportive culture.<sup>2</sup> Specifically, a firm is hardly likely to be able to increase its market share only by investing in technological and managerial resources associated with IT since they can be easily acquired and imitated (Carr 2003). However, firms will be able to obtain an increase in sales and market share of their main products and markets if they are able to transform their working environment into a corporate environment that encourages innovation by using their IT infrastructure and business applications and exploiting their IT management skills. Hence, it is hypothesized that:

H2c: The innovation-supportive culture mediates the link between technological IT resources and firm market performance.

H2d: The innovation-supportive culture mediates the link between managerial IT resources and firm market performance.

### **3. Research methodology**

#### **3.1. Operationalization of variables**

We applied a survey research methodology to measure the variables. Wherever possible, measurement items were adapted from existing scales. For new measures and for those significantly adapted or changed, standard scale development procedures were used. First, the domain of each construct was specified. Second, a large pool of items was developed based on the conceptual definition, ensuring that these items tapped the construct's domain. From this pool, items were chosen based on whether they conveyed different yet related shades of meaning. Third, the items were refined based on pretests of the survey instrument (Churchill 1979, Pavlou & El Sawy 2006). Table 1 provides a summary of the measurement items used in this study and their sources.

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<sup>2</sup> We recognize that other organizational capabilities (e.g., knowledge management, supply chain integration, etc.) can also mediate in the interface between IT and performance, but we limit this study to

Constructs	Summary of measurement items	Sources
Firm market performance	Competitive measures of sales growth, market share and product and market development	Adopted from Murray and Kotabe (1999) and Molina et al. (2007)
Innovation-supportive culture	Organizational capability to support the following initiatives developed by employees: New ways of doing things, productivity and quality improvements, elimination of wasteful/inefficient work practices, new product ideas, improved product quality, new ways to save money, new procedures and new marketing ideas	Adopted from Chandler et al. (2000)
Technological resources	Firm's annual investment dedicated to IT infrastructure and specific business applications per employee	Adopted from Ray et al. (2005)
Managerial resources	IT managers' skills in identifying and supporting projects based on IT, ensuring adequate funding of IT research and development, restructuring work processes to leverage IT opportunities, and collaborating with business managers to implement business practices	Adapted from Van der Heijden (2001), Byrd and Davidson (2003) and Ray et al. (2005)
Firm size (control)	Natural logarithm of the total number of the firm's employees	Adopted from Tanriverdi (2005)
Quality management practices implementation (control)	Degree of implementation of ISO 9000 serial certification and Total Quality Management type programs	Adopted from Zhu and Sarkis (2004)
Strategic agility (control) <sup>3</sup>	Organizational capability to modify its current strategy quickly, have a set of strategic options and apply new technologies	Adapted from Volberda (1996) and Verdu-Jover et al. (2006)

Table 1: Measurement sources for research constructs

### 3.2. Survey administration, response rate and assessment of informant competency

We conducted a large-scale cross-sectional survey with firms in Spain. The survey instruments were tested by an expert panel and through pilot testing. As a result, some of the questionnaire items were rewritten and words that were too technical were eliminated or replaced. Although a multiple-respondent approach would provide a stronger basis from which to demonstrate our hypothesized effects, a key respondent

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the possible mediating role of innovation-supportive culture.

<sup>3</sup> Firm size, quality management practices implementation and strategic agility were used as control variables. First, firm size was adopted to control the potential compounding effect of available resources or managerial diseconomies on firm performance (Tanriverdi 2005). Second, quality management practices implementation has been suggested as an important enabler of marketing performance (Molina et al. 2007). Finally, strategic agility can influence the development of the firm's innovation capability as well as the way in which the innovation-supportive culture positively influences firm market performance.

approach with cross-sectional design was chosen to maintain an acceptable response rate. The final version of the questionnaire was sent to senior IT and business executives in 1046 firms taken from the *Actualidad Económica 2007* database. The survey was mailed to a specific individual in each firm in the following way. First, the questionnaire and a cover letter were mailed to firms. The letter informed the recipients that a web-based version of the survey was available for convenience and provided them with an individual password to access the survey. Several reminders were sent by email (and a final reminder by phone) following procedures previously used in the prior literature (Tanriverdi 2005, Rai et al. 2006).

We received a total of 203 valid questionnaires, giving an effective response rate of 20.24%. The valid questionnaires obtained came from firms in 25 different sectors. 39 firms (19.21%) operated in the wholesale industry and 35 (17.24%) in real estate and/or construction. 15 firms (7.39%) belonged to the communications and graphic design sector, and 15 were chemical firms. 12 firms (5.91%) operated in the retail sector, 10 (4.93%) in non-metal mining, 9 (4.43%) in enterprise management services, 8 (3.94%) in food, drink, and tobacco, and the rest (60 firms, 29.56%) in other sectors.

In our survey, a high percentage of informants were ranked at the level of CEO, CIO, or higher (e.g., Vice President, CFO, Director of IT, etc.). In addition to asking about position, the survey included several other questions to assess the informant's competency (e.g., number of years that the informant had been working in the company, the senior manager's self-evaluation of the degree to which he or she was qualified to

respond to the survey). Collectively, these measures indicated that the informants were highly competent to answer the questions in the study.

#### 4. Results and analyses

Partial least squares (PLS), a structural equation modelling technique, was used to analyze the data. This technique does not require a large sample size and it is appropriate for early stages of theory development (Barclay et al. 1995). Given that this study is an initial attempt to develop a theoretical model that explains how two types of a firm's IT resources enable its innovation-supportive culture to enhance firm performance, PLS was considered to be appropriate for this research.

##### 4.1. Measurement model evaluation

The convergent validity of the reflective measures is determined in three ways (Hair et al. 1998): (1) The item reliability of each item, (2) the composite reliability of the construct, and (3) the average variance extracted (AVE) by the construct. Based on the results reported in Table 2, it was concluded that all the items demonstrated adequate convergent validity.

Constructs	Number of items	Items reliability <sup>4</sup>	Composite reliability	AVE
Managerial IT resources (MITR)	4	0.80-0.82	0.89	0.67
Innovation-supportive culture (ISC)	8	0.73-0.86	0.93	0.62
Firm market performance (FMP)	3	0.90-0.91	0.93	0.82
Quality management practices implementation (QMPI)	2	0.72-0.92	0.81	0.69
Strategic agility (STRA)	3	0.89-0.91	0.93	0.81

Table 2: Results of convergent validity test

<sup>4</sup> All measures are significant on their path loadings at the level of 0.001 (all tests are two-tailed).

Table 3 shows that the square root of the AVE for each construct was larger than the correlations between itself and the other constructs. This implies that each of the constructs shared greater variance with its own block of measures than with other constructs representing a different block of measures (Barclay et al. 1995). Therefore, this result demonstrates that our scales clearly show discriminant validity.

	Mean	S.d.	TITR	MITR	ISC	FMP	FS	QMPI	STRA
<b>TITR</b>	0.10	0.15	<b>1.00</b>						
<b>MITR</b>	3.83	1.34	0.53 <sup>****</sup>	<b>0.82</b>					
<b>ISC</b>	4.29	1.27	0.49 <sup>****</sup>	0.47 <sup>****</sup>	<b>0.79</b>				
<b>FMP</b>	4.88	1.54	0.12 <sup>*</sup>	0.16 <sup>**</sup>	0.34 <sup>****</sup>	<b>0.91</b>			
<b>FS</b>	2.95	0.62	-0.25 <sup>****</sup>	-0.01	-0.04	0.31 <sup>****</sup>	<b>1.00</b>		
<b>QMPI</b>	4.19	1.44	0.11	0.10	0.20 <sup>***</sup>	0.22 <sup>****</sup>	0.25 <sup>****</sup>	<b>0.83</b>	
<b>STRA</b>	4.56	1.71	0.29 <sup>****</sup>	0.41 <sup>****</sup>	0.29 <sup>****</sup>	0.30 <sup>****</sup>	0.23 <sup>****</sup>	0.17 <sup>**</sup>	<b>0.90</b>

Table 3: Result of discriminant validity test<sup>5</sup>

#### 4.2. Structural model analyses

The estimated path effects and the associated t-values were calculated using the Bootstrapping routine in SmartPLS 2.0.M3 (Ringle et al. 2005). Bootstrap analysis was performed with 500 subsamples (Rai et al. 2006). Figure 2 shows the results of the model analysis.

<sup>5</sup> Note: TITR: Technological IT resources and FS: Firm size. The shaded numbers in the diagonal row are square roots of the AVE. \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01, \*\*\*\* p < 0.001 (all tests are two-tailed).

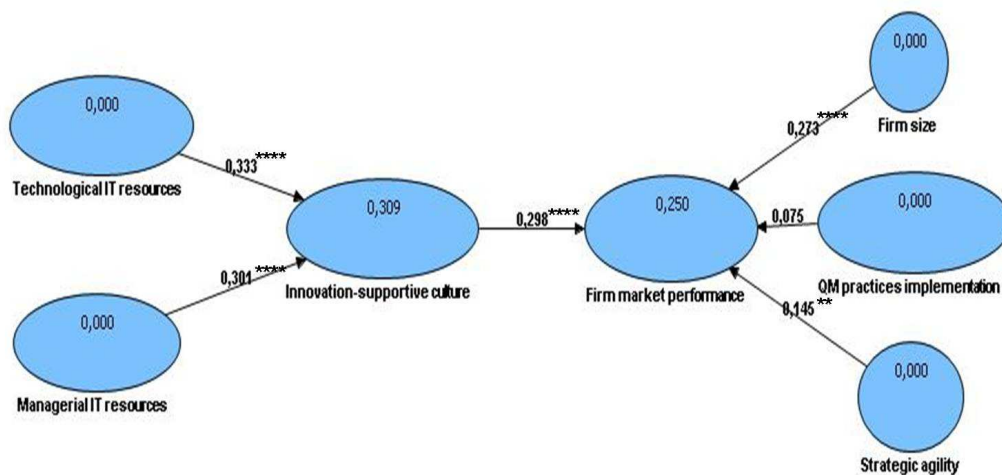


Figure 2: Results of model test<sup>6</sup>

To test Hypotheses 2c and 2d, we performed the analysis for testing the mediational hypothesis proposed by Baron and Kenny (1986). Following Baron and Kenny's (1986) four steps, we tested stepwise (1) the significant effect of technological IT resources (IV1) on firm market performance (DV) without innovation-supportive culture (MV), or the significant correlation between IV1 and DV (beta = 0.12,  $p < 0.10$ ;  $r = 0.12$ ,  $p < 0.10$ ); (2) the significant effect of IV1 on MV, or the correlation between the two variables (beta = 0.50,  $p < 0.001$ ;  $r = 0.49$ ,  $p < 0.001$ ); (3) the significant effect of MV on DV and the correlation between the two variables (beta = 0.30,  $p < 0.001$ ;  $r = 0.34$ ,  $p < 0.001$ ) and (4) the insignificant effect of IV1 on DV in the co-presence of MV (beta = -0.01,  $p > 0.10$ ). Thus, these results support H2c. Innovation-supportive culture is thus an organizational capability by means of which technological IT resources have a positive impact on firm market performance. H2d is also supported by the data, as the four steps required to accept it are achieved: (1) Beta = 0.08,  $p > 0.10$ ;  $r = 0.16$ ,  $p <$

<sup>6</sup> Note: \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ , \*\*\*\*  $p < 0.001$  (all tests are two-tailed).

0.05; (2)  $\beta = 0.48$ ,  $p < 0.001$ ;  $r = 0.47$ ,  $p < 0.001$ ; (3)  $\beta = 0.30$ ,  $p < 0.001$ ;  $r = 0.34$ ,  $p < 0.001$ ; and (4)  $\beta = -0.06$ ,  $p > 0.10$ .

## **5. Discussion**

The results indicate that innovation-supportive culture is a valuable capability that leads to firm performance and that two types of IT resources (technological IT resources and managerial IT resources) lead to the development of an innovation-supportive culture. Moreover, the results indicate that the investment in both technological IT resources and managerial IT resources influences competitive performance positively by means of innovation-supportive culture.

In particular, our study shows that both technological IT and managerial IT resources are key enablers of an innovation-supportive culture. The findings are consistent with prior research that has found a positive link between IT and process and product innovation (Tarafdar & Gordon 2007). Furthermore, the findings provide a link between IT and a main determinant of firm innovation itself, the innovation-supportive culture (Ou et al. 2007, Xin and Shi 2007)—a link that has not been identified in prior research. The study also shows that IT-enabled innovation-supportive culture leads to significantly better firm performance. The findings are consistent with the perspective of IT-enabled organizational capabilities that perceives IT resources as impacting positively on firm performance by means of other higher-order process capabilities (Rai et al. 2006). Further, the findings are tremendously important, as well as useful, for both academics and practitioners. Entrepreneurship literature has discussed the possibility that the investment in innovation-supportive culture might not be positively linked to

firm growth (Chandler et al. 2000). However, we find that the development of an innovation-supportive culture leads to higher sales growth, market share growth and product and market development. It is possible that the current economic crisis, with some exacerbating factors in the Spanish entrepreneurial context, is changing the managerial perception of the business value of the innovation culture in commercial terms.

## **6. Conclusion**

Using cross-sectional survey data from a sample of 203 leading Spanish firms from 25 industries we find that: (1) The innovation-supportive culture is a valuable capability that increases the firm's sales and market share, (2) the deployment of IT-based resources such as technological IT and managerial IT resources helps to develop a corporate culture that encourages innovation, and (3) the innovation-supportive culture is a critical capability through which IT-based resources influence firm market performance.

This study has several limitations that the reader should take into account in interpreting the results. First, although we obtain various indicators of the high competency of each key informant per firm, it would have been preferable to use two informants per firm, that is, an IT manager to respond to statements related to IT resources and a business manager to respond to those related to innovation-supportive culture, firm market performance, quality management practices implementation and strategic agility. Second, the study is cross-sectional in nature and its results are only generalizable to 25 business sectors of Spanish firms. Future research could extend these results by

analyzing whether they differ according to business sectors and/or samples of firms in different countries. Finally, since the methodology used is cross-sectional and static and the study predictive and exploratory in nature, it is only possible to show association, not causality.

Regardless of the aforementioned limitations, this study makes several contributions to the literatures on OM and IS. First, this study, both theoretically and empirically, reveals how firms can develop an innovation-supportive culture. Specifically, the findings of the study show the key role of IT-based resources (technological IT and managerial IT resources) in the development of this type of organizational culture. The study's theoretical arguments and its empirical findings are both interesting and useful to scholars in this research area. Second, this paper shows theoretically and empirically how firms can generate business value from IT-enabled innovation culture, a topic that has received little attention to date. The findings on this topic are thus also useful and valuable for academics who study the business value of IT. This research also makes practical contributions by providing a better understanding of how practitioners can shape business value of IT by implementing an innovation-supportive culture.

Future studies might examine how to incorporate other factors into our research model. For example, it would be interesting to incorporate the constructs process innovation and product innovation as variables that could mediate the interface between innovation-supportive culture and firm market performance. Studying the moderating effects of competitive aggressiveness on the relationships analyzed in this paper would also be very useful.

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