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# Individual Entrepreneurship Capacity and Performance of SMEs

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## Abstract

This paper analyses the importance of human capital and organizational capital on the determination of SME's performance, by proposing and testing a conceptual model about Individual Entrepreneurship Capacity, and its impact both on non-economic and economic performance. This constitutes an innovative approach in the sense that uses information collected at the individual level, that is, the entrepreneur. Moreover, it constitutes a first attempt for facing the caveat in the literature on the relationship among types of capital and entrepreneurial performance.

A model where the individual entrepreneurship capital is defined as a function of two types of capital: Human and Organizational; is proposed and empirically tested. For the Human Capital we consider three dimensions: (a) Individual Characteristics; (b) Managerial Push; and (c) Managerial Pull. As concerns the Organizational Capital, four dimensions are considered: (i) Individual Entrepreneurial Behavior; (ii) Collective Entrepreneurial Behavior; (iii) Managerial Practices; and (iv) Organizational Culture (in terms of the Superstructure and the Socio-Structure).

The use of the stepwise method provides the selection of significant variables that impact on SME's performance. When only non-economic indicators are considered for measuring the performance, in what respects the human capital we find out that the only significant variable is: enthusiasm at work. In what concerns the organizational capital the significant variables are: efficient organizational structure; participative management; incentives for interdisciplinary discussion and dialogue; and frequent meetings of working groups. For its turn, when economic indicators are considered for measuring the performance, we find out that the significant human capital determinants are: entrepreneur's intuition; and propensity for innovating activities. In terms of organizational capital determinants we reveal that the significant variables are: efficient organizational structure; and use of external indicators for improving entrepreneurial performance.

The main policy implication of the paper is the possibility of creating, at an individual level, new incentives and motivational tools based on the identification of the most important variables of human capital and organizational capital, for fostering SME's performance.

**Keywords:** Human Capital, Organizational Capital, Performance, SME.

JEL Classification Codes: D23, L25, L26.

## 1 Introduction

According to Audretsch (2003), for analyzing the determinants of entrepreneurship, one of the most important units of observation is the individual level. In the entrepreneurship literature, the prevalent framework has been the general model of income choice (Knight 1921; Lucas 1978; Kihlstrom and Laffont 1979; Holmes and Schmitz 1990; Jovanovic 1994; Blanchflower and Meyer 1994; Blanchflower and Oswald 1998).

The emergence of lively future empirical research developed by Hébert and Link (1988), Bruyat and Julien (2000), Casson (2003), Shane (2004), Blanchflower (2007), Jungwirth (2007), and Parker (2005, 2006, 2007), stresses the need for developing eclectic approaches aiming to allow us to gauge the entrepreneurship-firm size relationship. In this framework, aspects of human behavior, such as the leadership and psychology of an entrepreneur, and the organizational networks deserve further research.

Although it has previously been pointed out that firms with higher level of human capital tend to have improved financial performance (Youndt *et al.* 2004) there is a caveat on the literature about the association between human capital and non-economic performance of firms. Moreover, as far as the effect of organizational capital on non-economic and economic performance is concerned, this has not been thoroughly explored.

Through the development of an innovative analysis based on information collected at the individual level i.e. the entrepreneur, this paper aims to evaluate the importance of entrepreneurship individual capacity built on human capital and organizational capital, in terms of the determination of SME performance.

This paper contributes to the literature on entrepreneurship and small business management by proposing a conceptual model of the relationship between Individual Entrepreneurship Capacity and entrepreneurial performance. More specifically, by making use of data collected at the individual level i.e. the entrepreneur, we assess the relationships between different dimensions of organizational capital and human capital and the performance of Portuguese SMEs. Moreover, it provides an innovative analysis through the use of subjective indicators for measuring non-economic performance, which provides new insights for improving, in operational terms, a successful performance of SME ruled, fundamentally, by the individual capacity of the entrepreneur.

The paper is structured as follows. First, it introduces the importance of individual entrepreneurship capital on performance of SMEs. Second, from the literature review on empirical evidence about the relationship between human capital, organizational capital and performance of SMEs, we derive the research hypotheses. Third, it presents the research method, the dataset and the different variables used to measure the two types of capital, and two levels of entrepreneurial performance: non-economic and economic. Fourth, it discusses the empirical findings. Fifth, it concludes and proposes guidelines for future research, as well as various challenges for policymakers and entrepreneurs.

## **2 Theoretical Framework**

### **2.1 Theory**

Baumol (2002) writes that the entrepreneur has the specific capability of creating a new market, by carrying out some test marketing or test ballooning, in order to learn about the characteristics of the market and to reveal consumers' preferences. That is an example of how an entrepreneurial activity may transform uncertainty into risk, and that is the way Individual Entrepreneurship Capacity becomes seen in the market.

In this framework, organizational entrepreneurship capacity corresponds to the organizational factors that catalyze the combination of factors of production and result in the creation of sources of capital in the pursuit of entrepreneurial activities within a single firm or a single unit of the firm, that embrace multiple levels of Individual Entrepreneurship Capacity (Audretsch and Mosen 2008).

Chung and Gibbons (1997) stress the importance of two basic aspects of organizational culture: (i) the superstructure, and (ii) the socio-structure. The former is concerned with the ideology that is represented through the core beliefs, values, and dominant assumptions of the organization. The latter includes the social capital whose constitution includes learning, information exchange, norms and sanctions.

The proposal of Chung and Gibbons (1997) is the basis of the current proposal for a conceptual model, since we consider that basic aspects of organizational culture, along with human capital, play an influential role in determining Individual Entrepreneurship Capacity.

Under a managerial and organizational framework, and linking different dimensions of human capital and organizational capital in our revisited conception of Individual Entrepreneurship Capacity within an SME, we propose to explore the relationships established between the dimensions of these types of capital, and the levels of non-economic and economic performance. This is particularly innovative since it is more usual to find examples of studies focused on economic performance in the existing literature on entrepreneurship. Therefore, this paper is a first attempt to identify the significant dimensions and variables of individual entrepreneurship capital that impact both on economic and non-economic performance of an SME.

## 2.2 Hypotheses

Human capital is widely believed to improve entrepreneurial performance (Stuart and Abetti 1990; Blanchflower and Oswald 1998; Bruderl and Preisendorfer 1998; Cooper *et al.* 1994; Pennings *et al.* 1998; Van Praag and Cramer 2001; Van Praag 2003; Bosma *et al.* 2004).

Human capital theory maintains that knowledge provides individuals with increases in their cognitive abilities, leading to more productive and efficient potential activity (Becker 1964; Davidsson and Honig 2003). In the entrepreneurial process, individuals should also have superior ability to successfully exploit opportunities. Following Colombo and Grilli (2005), individuals with greater human capital are likely to have better entrepreneurial judgment.

Empirical studies looking at the effect of human capital (Cooper *et al.* 1994; Van Praag and Cramer 2001; Bosma *et al.* 2004) on performance do not constitute a novelty. However, little has been done to examine the real impact of human capital on non-economic performance.

On the other hand, empirical research has obtained a range of results regarding this relationship between human capital and performance, but those results are not consensual. Studies examining this relationship have not yielded consistently solid results. For example, Davidsson and Honig (2003) suggest that the association between human capital and entrepreneurial performance may be confounded by a number of factors, such as persistence and education.

Carmeli (2004) noted that studies have constantly shown a positive effect of human capital on entrepreneurial performance. In this sense, Bosma *et al.* (2004) concluded that human capital appears to influence entrepreneurial performance substantially. In the study of Bosma *et al.* (2004) three measures of performance were employed: survival rate, profit and generated employment.

Davidsson and Honig (2003) supported the theory that human capital determines entry into nascent entrepreneurship, but they found reduced evidence that the former carries out the start-up process towards successful completion.

According to Bartlett and Ghoshal (2002), to develop human capital is one of key objectives of organizational knowledge-sharing practices. Hsu (2007) studied the relationship between these practices and human capital and he concluded that, as long as human capital is developed, human resources can improve their job performance and ultimately, entrepreneurial performance with new and relevant knowledge.

As mentioned by Batjargal (2007), human capital (education, skills and motivation of entrepreneurs) transforms opportunities spotted in networks into tangible benefits. Thus,

*Hypothesis 1a: Human capital is positively related to the SME performance measured through non-economic indicators.*

*Hypothesis 1b: Human capital is positively related to the SME performance measured through economic indicators.*

Lev and Radhakrishnam (2004) argue that the value of organizational capital is predominately tacit and difficult to transfer across firms, and hence of questionable value in acquisitions. This capital reflects the total sum of managerial decisions and activities.

Prior literature has stressed the positive link between organizational capital and venture outcomes (Bates 1990; Bruderl *et al.* 1992; Shane and Stuart 2002; Bontis 1998; Rudez and Mihalic 2007). Hsu (2007) studied the relationship between these outcomes and two dimensions of organizational capital which tends to vary across new firms: prior founding experience/academic training and social capital. This research concluded that measures associated with organizational capital are positively related to venture valuation.

For Lev and Radhakrishnam (2004), organizational capital, a unique productive resource of the firm, is often the most important determinant of corporate performance and growth. Organizational capital is the persistent creator of value and growth for business. In this sense, organizational capital is the major idiosyncratic resource that impacts on performance and growth of firms. In turn, Information and Communication Technologies are a major enabler of organizational capital.

Milgrom and Roberts (1990), and Brynjolfsson *et al.* (2002) revealed that firms who adopt information technology did not become more productive unless they also adopted certain complementary changes to business organization, such as increased decentralization and the use of self-managing teams. For Samaniego (2006), new firms have yet to build organizational capital, so they do not face the correspondent opportunity cost.

Krause *et al.* (2007) also concluded that organizational capital investments and accumulations can be expected to improve buyer performance. However, the effects of different kinds of organizational capital can be expected to differ according to the type of performance improvements.

The research question in this paper is concerned with the identification of the determinant variables considered in distinct dimensions of each type of capital (i.e. human and organizational), by using data collected at an individual level (i.e. the entrepreneur) in order to identify the signals of the relationships established between the Individual Entrepreneurship Capacity (within an SME) and the entrepreneurial performance, using non-economic and economic measures.

For this purpose, and after reviewing the empirical evidence on the impact of human capital and organizational capital on entrepreneurial performance, four hypotheses will be considered, according to the previously mentioned types of capital. Thus,

*Hypothesis 2a: Organizational capital is positively related to the SME performance measured through non-economic indicators.*

*Hypothesis 2b: Organizational capital is positively related to the SME performance measured through economic indicators.*

## 2.3 Conceptual Model

The main aim of the conceptual model now proposed is to formalize the recent concept of Individual Entrepreneurship Capacity (Audretsch and Monsen 2008) as a function of two distinct but inter-related types of capital: Human and Organizational.

Regarding Human Capital, three dimensions are considered: (i) Individual Characteristics; (ii) Managerial Push; and (iii) Managerial Pull. In terms of the individual characteristics of the entrepreneur, seven variables are going to be considered. This aims to bring together in the same dimension the level of intuition, mixed with the psychological profile, and enthusiasm induced by the entrepreneur in the relationships established both with their internal partners (i.e. collaborators) and external partners (i.e. stakeholders).

Furthermore, two driving forces of the managerial process are incorporated into the conceptual model, namely the Managerial Push and the Managerial Pull. The Managerial Push is captured through the inclusion of three variables related to the differentiating skills of human capital that we can find within an SME. The possibility of observing managerial pull is also considered through the inclusion of four explanatory variables, which are associated with the inductive process of creativity and responsibility, both at external and internal level.

For analyzing the Organizational Capital, we consider four dimensions: (i) Individual Entrepreneurial Behavior; (ii) Collective Entrepreneurial Behavior; (iii) Managerial Practices; and (iv) Organizational Culture (in terms of the Superstructure and the Socio-Structure).

The first dimension relates to Individual Entrepreneurial Behavior and is captured through the testing of a set of three variables that embrace non-resistance to change, the implementation of new ideas proposed by internal collaborators and the incentives for accomplishing, on a continuous basis, interdisciplinary discussion and dialogue.

The second dimension corresponds to Collective Entrepreneurial Behavior, which is characterized through an operational set constituted of three testing variables. In this context, we are taking into consideration the commitment for interrelation among workers, the decision-making capability of internal working groups and the promotion of frequent meetings of working groups.

The third dimension concerns Managerial Practices where the focus is placed on the adoption of participative management schemes, the ultra valorization of economic incentives and the simultaneous development of internal communication systems. The promotion of inter-departmental meetings is taken into account, and also the use of external indicators for improving entrepreneurial performance.

As in Chung and Gibbons (1997), the fourth dimension stresses the importance of two basic aspects of organizational culture: (i) the superstructure, and (ii) the socio-structure. The first basic aspect is incorporated into the conceptual proposal through the inclusion of a set of nine variables that represent the SME's ideology, based on coordination, motivation and valorization of skills and ideas of the collaborators within the SME. The second aspect relates to the Socio-Structure that is an alternative way of incorporating the social capital of the entrepreneur. The selected set of six variables identifies the organizational learning systems, the internal information networks and the supportive systems in the decision making process.

## 3 Research Method

After presenting the research question and proposing the hypotheses to be empirically tested, the next step is to identify the data and the variables. Afterwards, by selecting a stepwise method in a multiple regression analysis, the results of the conceptual model testing are presented.

In this sense the Portuguese reality is selected as an adequate laboratory for testing the hypotheses, due to the fact that the entrepreneurial structure is mainly composed of SMEs<sup>1</sup> i.e. 99.0% of the firms are small and medium sized. They employ over 74.0% of the labor force and are responsible for more than 58.0% of the total sales of Portuguese industry (IAPMEI 2004).

### 3.1 Dataset and Variables

A dataset of Portuguese firms was constructed, through the prior administration of a questionnaire to an initial random sample of 300 SMEs, during the period from March to June 2006. The answer rate was 26.7%. The selection criteria were: (i) activity sector; and (ii) dimension (i.e. the number of employees).

Taking into consideration the literature review and the proposal of conceptual model, for measuring performance, economic and non-economic measures are used. In terms of the dependent (or explained) variables related to entrepreneurial performance, the totality of the measures that were used was assessed by using items that ask the entrepreneurs to evaluate the performance of their SME, in terms of the results obtained during the last three years, in comparison to those that were obtained by competitors. Here, a five point Likert scale was used, considering a range between a minimum level of 1 ('totally negative') and a maximum level of 5 ('totally positive').

For quantifying the set of independent variables and according to the available information on the dataset, the human capital is qualified through the use of 14 variables, whereas, the organizational capital is characterized by 27 variables. All the variables were measured using a five point Likert scale, where the minimum level of 1 corresponds to 'totally disagree', whereas the maximum level of 5 corresponds to 'totally agree'.

### 3.2. The Estimation Process

In the estimation process, multiple regressions are performed by selecting the stepwise method, which provides, on a more accurate basis, the identification of the variables' estimators. The results for colinearity statistics, heteroscedasticity and autocorrelation tests are also provided<sup>2</sup>.

In this context, a multiple regression is performed, by making use of all the discrete variables available in the dataset. The estimation process is based on Ordinary Least Squares (*OLS*), and a stepwise procedure is used for guaranteeing the detection and inclusion of the significant parameters. For this purpose, we consider the following model specifications, by taking as dependent variables: the entrepreneurial performance by making use of non-economic performance measures ( $ENTPerf_{Non-economic}$ ) and economic performance measures ( $ENTPerf_{Economic}$ ):

$$ENTPerf_{Non-economic} = \alpha_1 + \beta_{11}IC + \beta_{12}MPUSH + \beta_{13}MPULL + \beta_{14}IEB + \beta_{15}CEB + \beta_{16}MP + \beta_{17}OCS + \beta_{18}OCSS + \varepsilon_{1i} \quad (1)$$

$$ENTPerf_{Economic} = \alpha_2 + \beta_{21}IC + \beta_{22}MPUSH + \beta_{23}MPULL + \beta_{24}IEB + \beta_{25}CEB + \beta_{26}MP + \beta_{27}OCS + \beta_{28}OCSS + \varepsilon_{2i} \quad (2)$$

<sup>1</sup> For the purposes of this study, for classifying the entrepreneurial units as SMEs, the number of employees was used as the defining criteria i.e. less than 250 employees.

<sup>2</sup> Although the likelihood and the significance of the estimators are guaranteed by using the stepwise method, the results of the tests are available upon request to the authors.

Where: *IC* = Individual Characteristics; *MPUSH* = Managerial Push; *MPULL* = Managerial Pull; *IEB* = Individual Entrepreneurial Behavior; *CEB* = Collective Entrepreneurial Behavior; *MP* = Managerial Practice; *OCS* = Organizational Culture: The Superstructure; and *OCSS* = Organizational Culture: The Socio-Structure.  $\varepsilon_{1i}$  and  $\varepsilon_{2i}$  = The disturbance error terms of equation 1 and 2.

#### 4 Empirical Findings and Discussion

When only non-economic indicators are considered for measuring the performance of SMEs, with regards to human capital, we find that the only significant variable is: enthusiasm at work. Concerning organizational capital, the significant variables are: efficient organizational structure; participative management; incentives for interdisciplinary discussion and dialogue; and frequent meetings of working groups.

**Table 1:** Multiple Linear Regression Models: Stepwise Method<sup>a</sup>

Independent Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept	9.369***	5.166***	6.969***	6.478***	6.086***
<i>Human Capital</i>					
Enthusiasm at work	2.578***	1.890***	2.256***	2.017***	2.130***
<i>Organizational Capital</i>					
Incentives for interdisciplinary discussion and dialogue				0.988*	1.383**
Efficient organizational structure		1.738 ***	2.111***	1.881***	2.132***
Inter-departmental meetings					-0.788*
Participative management			-1.137*	-1.482*	-1.380*
F	37.872***	31.676***	24.512***	20.193***	17.790***
Adjusted R Square	0.318	0.437	0.472	0.493	0.515
N = 80; <sup>a</sup> Dependent variable: Non-economic performance. * p < 0.05; ** p < 0.01; *** p < 0.001					

In turn, when economic indicators are considered for measuring performance, we find that the significant human capital determinants are: entrepreneur's intuition and propensity for innovating activities. In terms of organizational capital determinants we reveal that the significant variables are: efficient organizational structure and use of external indicators for improving performance.



**Table 2:** Multiple Linear Regression Models: Stepwise Method<sup>b</sup>

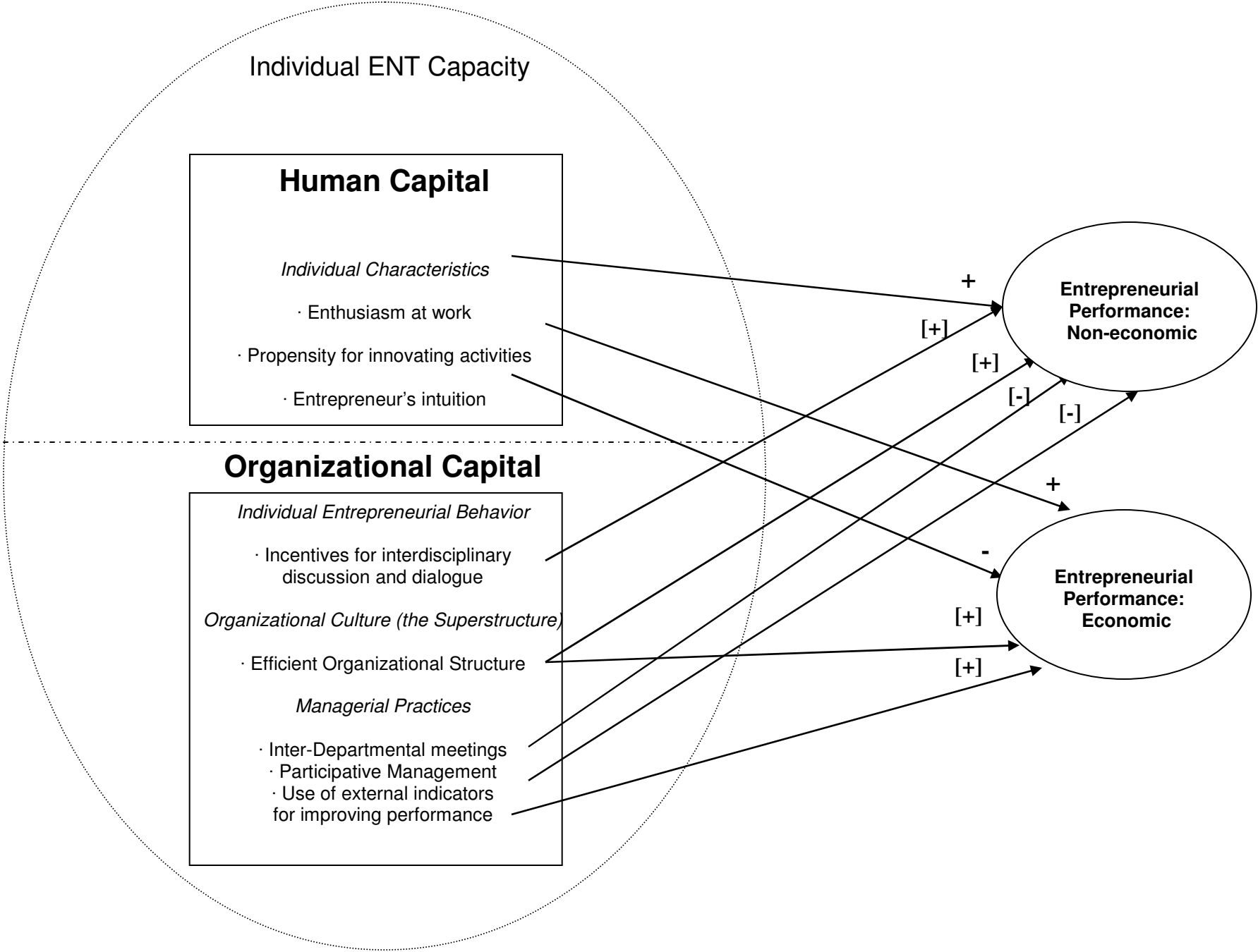
Independent Variables	Model 1	Model 2	Model 3	Model 4
Intercept	6.658*	3.953†	7.189**	6.293*
<i>Human Capital</i>				
Propensity for innovating activities		1.252**	1.308**	1.078**
Entrepreneur's intuition			-1.094*	-0.977*
<i>Organizational Capital</i>				
Efficient organizational structure	3.014***	2.608**	2.764***	2.319***
Use of external indicators for improving performance				0.891*
F	34.466***	24.765***	19.956***	16.819***
Adjusted R Square	0.298	0.376	0.419	0.445
N = 80; <sup>b</sup> Dependent variable: Economic performance. † p < 0.1; * p < 0.05; ** p < 0.01; *** p < 0.001				

As far as human capital is concerned, as was previously pointed out by Pennings *et al.* (1998) and Bosma *et al.* (2004), the empirical findings relative to the use of measures of non-economic performance reveal a positive effect of the variable concerning enthusiasm at work, which represents individual capital. As stated by the authors, when we consider the characteristics of the founder's talent, by using the proxy of entrepreneurs' intuition, a contrasting result is found, since a negative effect on economic performance is now detected. The new and relevant knowledge that is obtained, especially by developing innovative activities, has a positive effect only at the level of the economic performance. Thus, the result now obtained is in concordance with the vision expressed by Bartlett and Ghoshal (2002), and Hsu (2007). Relative to organizational capital, in accordance with the perspective of Hsu (2007) the variables of prior founding experience, academic training and social capital are tested under an unique proxy that refers to incentives to interdisciplinary discussion and dialogue. As was expected, a positive effect is found in terms of non-economic performance.

One of the most surprising results is that which corresponds to the negative effect of both inter-departmental meetings and participative management on the non-economic performance of SMEs. This is in contrast with the results obtained by Lev and Radhakrishnam (2004), which revealed a positive relationship between organizational capital and entrepreneurial performance. When we characterize the organizational capital, at an individual level, by using a variable relative to the use of external indicators for improving performance, a positive effect on the economic performance is detected.

To sum up, the results may be observed through the representation of the conceptual model for assessing the relationships that are connected to the determination of entrepreneurial performance, on the part of the individual entrepreneurship capital that resides within the SMEs (see Figure1).

Figure 1: Individual Entrepreneurship Capacity and Entrepreneurial Performance: Results of Model Testing



## 5. Conclusions

This paper analyses the importance of human capital and organizational capital on the determination of SME's performance, by proposing and testing a conceptual model of Individual Entrepreneurship Capacity, and its impact both on non-economic and economic performance. This constitutes an innovative approach in the sense that it uses information collected at the individual level i.e. the entrepreneur. Moreover, it constitutes a first attempt to face the caveat in the literature on the relationship between types of capital and entrepreneurial performance.

This is an important point since there is lack of studies on the role played by distinct types of capital determined at the individual level and within the firm, in terms of the determination both of the non-economic and economic performance. For this purpose, the individual characteristics of the entrepreneur are captured through the use of different variables that form part of the different dimensions of the proposed conceptual model.

The estimation of multiple regression models, using the stepwise method, provided the following main findings:

- (1) The non-economic performance of SMEs is positively affected by enthusiasm at work, the incentives for interdisciplinary discussion and dialogue and efficient organizational structure.
- (2) The non-economic performance of SMEs is negatively affected by inter-departmental meetings and participative management.
- (3) The economic performance of SMEs is positively affected by the propensity for innovative activities, efficient organizational structure and use of external indicators for improving entrepreneurial performance.
- (4) The economic performance of SMEs is negatively affected by the entrepreneur's intuition.

It should be stressed that the variable that represents the efficient organizational structure within the Organizational Culture's dimension of Organizational Capital is the only variable that impacts positively on both types of performance: non-economic and economic.

This paper provides several insights and policy implications for public and private managers, in terms of the promotion of Individual Entrepreneurship Capacity within the SME. For policymakers, the design of formal programs oriented to the reinforcement of the propensity for innovative activities and the frequent use of external indicators should be promoted, in an organizational context, but focused on the entrepreneur, as well as external and internal collaborators. This type of formal program, as stated before, will contribute towards enhancing the economic performance of SMEs. For the managers the results provided here are particularly important, because if they expect to improve the non-economic performance of an SME they should bet on the transmission of enthusiasm at work and on the creation of incentives for interdisciplinary discussion and dialogue. Moreover, they should avoid the entropy that sometimes originates from interdepartmental meetings and the adoption of practices of participative management.

In terms of the guidelines for future research, we propose to expand the database and, afterwards, to develop a Structural Equation Model (SEM), in order to identify the causality relationships established between other types of capital determinants (such as director capital, relational capital and ideological capital), entrepreneurial cognition and SME performance.

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