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## **Top Managers Networking Influence on Competitive Intelligence Practices: the Case of Hi-Tech SMBs**

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**Abstract:**

*This paper aims at studying and measuring the influence of SMEs' top decision makers' social capital on competitive intelligence practices. To do so, a literature review of both competitive intelligence and social capital fields led us to construct a conceptual model based on four hypotheses. Methodological details of the test model using a PLS approach are outlined. Data from 193 questionnaires filled out by high-tech French SMEs, are analysed through a PLS regression. A re-sampling procedure with the construct level change option and 250 re-samples is run. The results provide support for the four hypotheses and so contribute toward improving efficiency of competitive intelligence practices in four fields.*

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## **Introduction**

While the functions and the operational dimensions of intelligence networks in corporate competitive intelligence practices have been clearly defined and distinctly explained in management literature, the relationship between the social capital of top managers and the level of development of said practices has never been dealt with as a research topic in its own right. Starting from this observation, the aim of this paper is to fill this gap by studying the influence of top management's social capital on the development of competitive intelligence (CI) practices in SMBs. The interest of this study is to scientifically corroborate or refute the decisive role, which has until now only been intuitively asserted, of top managers' social capital in the development of CI in their firms.

To do this, we will start with an overview of literature on CI and social capital before defining a theoretical model correlated around four hypotheses. Secondly, the field of study and the sample designed to test the hypotheses are presented. The methods used to test the model are based on a PLS approach with particular attention devoted to defining the epistemic relation between constructs and their items, the methods used to confirm measurement instruments and the test protocol for the structural equations model. Finally, a third section is devoted to results confirming the model, based on a sample of ninety-three SMBs in the west of France. These results are presented and discussed in terms of their contributions and limitations, as well as avenues for further exploration.

## **Competitive intelligence within SMBs: from a structured paradigm to versatile and plural practices**

While CI is traditionally defined in the literature in reference to practices in large companies (Bournois & Romani, 2000), that is to say, as a full-fledged approach based on the structured organization of three functions - scanning of the environment, protection of intangible corporate assets and influence on the environment - recent research concerning CI in SMBs (De La Robertie & Lebrument 2008, 2009, 2010) reveals that top managers in SMBs are aware of the stakes and contributions of competitive intelligence in increasing their firms' performance and competitive edge. This awareness goes hand in hand with the absence of a structured approach, i.e. formal processes coordinated by and around a central system ensuring control. Thus SMBs develop and update a mix of disparate CI "practices", a hodgepodge of surveillance activities, lobbying, protection and security procedures and influence initiatives that are more or less coordinated and involve more or less all employees. Indeed, CI practices in SMBs are not partial but versatile in that they can serve several purposes depending on the processes involved and where they are deployed (De La Robertie & Lebrument 2008, 2009). In this sense, we have observed that the CI practices studied seem to extend well beyond the conceptual field in which theory would confine or even deform them.

While the literature on CI (Larivet, 2004; El Mabrouki, 2007) insists on the important role played by information networks within the firm - to the extent they contribute to the intelligence and influence process - the place and role of managers' social resources in the context of an organization's CI practices remains to be explained. Indeed, these studies confer a distinctly significant role to managers' social resources in the development and updating of these practices, specifically in the context of intelligence and influence processes. Organised around the development axes of the firm, the manager's social networks constitute both a means of collecting various sorts of information – eventually transmitted internally to all the persons concerned or interested - and directly or indirectly relaying lobbying initiatives aimed at serving the organization's interests. In SMBs, the social capital of top managers therefore appears to work like a catalyst, triggering certain CI practices. Thus, it is important to review the notion of social capital.

### **The social capital of top managers: an explanatory factor behind the development of CI practices in SMBs?**

While definitely present, implicitly, in Weber's *The Protestant Ethic and the Spirit of Capitalism* (1905), theorization of the concept of social capital was initiated at the start of the 80s by Bourdieu (1980) and Lin (1982). Although the concept of social capital was first produced through work in the field of social sciences and anthropology, its object - relational networks and resources – seems relevant when we try to understand how, and in which conditions, an economic player takes advantage of resources offered by means of social networks (Chung, 2000; Arrègle et al., 2004; Comet, 2006; Barlatier and Thomas, 2007).

In keeping with the work of Baron and Markham (2000), it is possible to define social capital as the “actual and potential resources individuals obtain from knowing others, being part of a social network with them, or merely from being known to them and having a good reputation” (Arrègle et al., 2004). Nevertheless, a manager's social resources can only generate useful social capital for the firm in certain circumstances. Indeed, a manager's social network can only produce social capital for the firm if he is capable of collecting information with high added value that is useful in making decisions or influencing decisions that further the interests of the business.

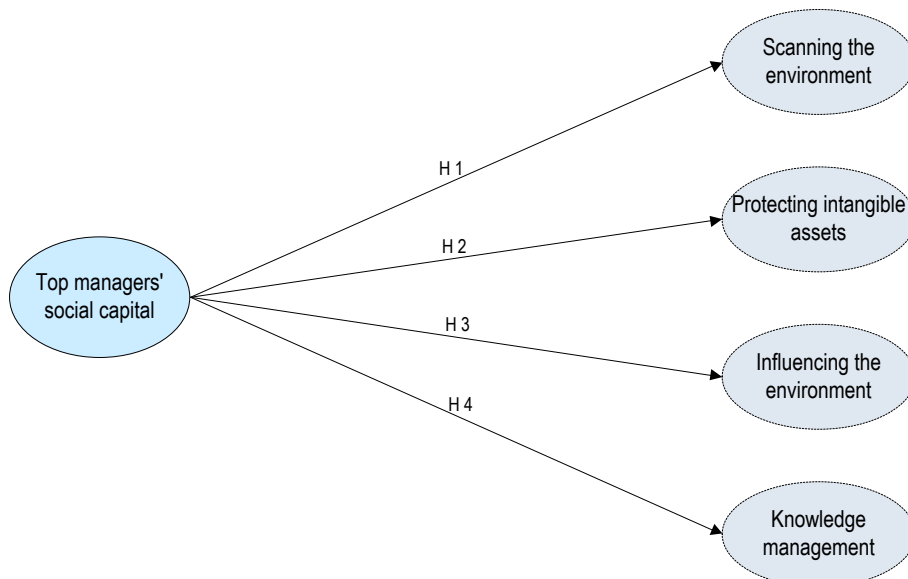
Moreover, in the sense demonstrated by Nahapiet and Ghoshal (1998), the social networks of managers have a direct impact on the intellectual capital of a given SMB, i.e. its knowledge, skills and capacities to learn, which "is explained by the fact that intellectual capital is created through two organizational mechanisms: combination and exchange”, with "inter and intra group links" playing "a fundamental role in these two dimensions"(Arrègle et al., 2000). The advantages SMB managers derive from participation in social networks fall into two categories of social capital benefits identified by Biggart and Castanias (2001) and Adler and Kwon (2002) which are increased efficiency in searching for and acquiring

information at lower costs and influencing certain members of the network so that they act in a way that furthers their goals (Arrègle et al., 2004).

Social networks used by managers of SMBs can therefore be understood as intangible strategic assets to the extent they meet the different criteria used by Barney (1991, 2001) to define a strategic resource: valuable, rare, imperfectly imitable and non-substitutable (VRIN). By establishing the plurality of institutional, economic and political relations which the firm maintains with its immediate environment, the roots of SMB managers' social networks transform their social capital into a strategic resource that conditions the development of CI practices.

### Theoretical model and underlying hypotheses

While the literature emphasizes that the social capital of managers is embedded in CI practices, it fails to specify or measure its causal role in their development. Based on the distinction of four practices – scanning the environment, protecting intangible assets, influencing the environment and knowledge management - contrasted through a review of the literature, the aim of this article is to test a theoretical model designed to measure the explanatory influence of SMB managers' social networks on the level of development of CI practices within their firms. Thus, the theoretical model integrates four hypotheses aimed at assessing the effects of four explanatory variables on the level of development of CI practices as shown in the figure below:



**Figure 1: Theoretical model based on four hypotheses**

Our cardinal hypothesis consists in considering the social capital of an SMB's top managers as a determinant in development of the firm's CI practices. Starting with

this point, we want to test the following four hypotheses linked to the relation between the managers' social capital and the level of development of CI practices:

☞ **Hypothesis 1:** *The social capital of top managers positively influences the development of environmental scanning practices*

☞ **Hypothesis 2:** *The social capital of top managers positively influences the development of practices designed to protect intangible assets*

☞ **Hypothesis 3:** *The social capital of top managers positively influences the development of practices to influence the environment*

☞ **Hypothesis 4:** *The social capital of top managers positively influences the development of knowledge management practices*

### **Research methodology : Data collection**

Using the MEITO directory<sup>2</sup>, we were able to access a list of 881 firms doing business in western France as well as the names of their CEOs and top managers. For each firm listed in MEITO we checked, using Diane, headcounts and turnover based on annual reports for the 2007 fiscal year. Among the 881 firms listed, 757 qualified as micro, small and mid-sized businesses as defined in European Commission Recommendation 2003/361/EC. Our initial sample therefore consists in 757 SMBs, distributed in the following manner according to their total workforce and turnover in 2007.

Data was collected via an online questionnaire addressed to top managers of the 757 firms in the initial sample. The online questionnaire was administered with the help of LimeSurvey open source software. In the end, 221 questionnaires were completed, which corresponds to a response rate of 29.2%. Among these 221 questionnaires, 28 could not be exploited because too many items were left blank, leaving 193 questionnaires that could actually be used –or 25.5% Furthermore, the final sample appears to be fairly representative of the initial sample.

### **Epistemological principles governing the operationalization of concepts**

Before studying the indicators that are supposed to measure the theoretical construct, it is necessary to specify the nature of the epistemic relation between said construct and the indicators measuring it, i.e. between the latent variable and its associated manifest variables. Indeed, two types of relation can be observed between a latent variable and its manifest variables (Jarvis et al, 2004; Cri e, 2005):

☞ the construct is reflected in the indicators that measure it: it is therefore a reflexive variable

☞ the construct is first formed by the indicators that measure it: it is therefore a formative variable

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<sup>2</sup> MEITO is a French association created in 1984 that is supported and financed by the Brittany Region and several local communities. Its purpose is to stimulate and develop the Electronics, IT, Telecoms, Imagery and Multimedia sectors.

In the case of a reflexive relation, the latent variable is the cause of manifest variables, while in the case of a formative relation, the manifest variables are the cause of the latent variable (Picot-Coupey, 2006). Thus, in order to clarify the terms used in future developments, we will borrow the terminological distinction used by Bollen and Lennox (1991) in which a scale is constituted of multi-item measurements based on reflexive variables, while an index is defined by the formative relation between a construct and its different measurement indicators. While the distinction between the reflexive and formative approaches means, in practice, the reasoned decision to assign the causal principle of the measurement either to a latent variable or the manifest variables, correlatively it has significant consequences in terms of operationalization of constructs as well as validation of measurement instruments. To succeed, when specifying the variables we applied the decision criteria of Jarvis, Mackenzie and Podsakoff (2004) to determine if a construct was formative or reflexive. All of the model's constructs were operationalized using variables from a review of the literature in Strategies, Organization Theory, but also Sociology.

### **The nature of measurement instruments and associated items**

Top management's social capital is defined as all the interpersonal assets a manager can put to use within, or outside, the context of his professional duties. In order to measure the social capital of top managers, we have defined and selected three dimensions –“relational assets”, “participation assets” and “trust assets” – that assess, respectively, the nature and intensity of participation in networks and associations, through a structural approach, and the importance of reciprocal trust in successful business transactions, through a cognitive approach (Uphoff , 2000). Therefore this is a formative construct and constitutes an index.

Since there is no methodological approach that is considered both valid (recognized by all) and reliable (constant results with a variety of samples) and that could be used to confirm an index, our approach is based on recommendations and advice in several studies that have been formalized and structured to create a methodological protocol by Picot-Coupey (2006). The theoretical model was therefore refined by eliminating items step-by-step, which enabled measurement, for each purified item, of the consequences of its elimination for the global model and the other items in the construct. Stability of results was checked after each step where items were eliminated (only one item per step and per latent variable).

### **Results and discussion : Validation of the structural model**

Five latent formative variables make up the model for assessing:

- ⊖ top managers' social capital
- ⊖ environmental scanning processes
- ⊖ practices designed to protect intangible assets
- ⊖ initiatives to influence the professional environment

➤ knowledge management practices

The choice of estimation parameters was based on the analyses, recommendations and proposals in literature on the PLS approach (Tenenhaus , 1998)

The model was estimated using SmartPLS 2.0 M3 software with the estimation parameters detailed above.

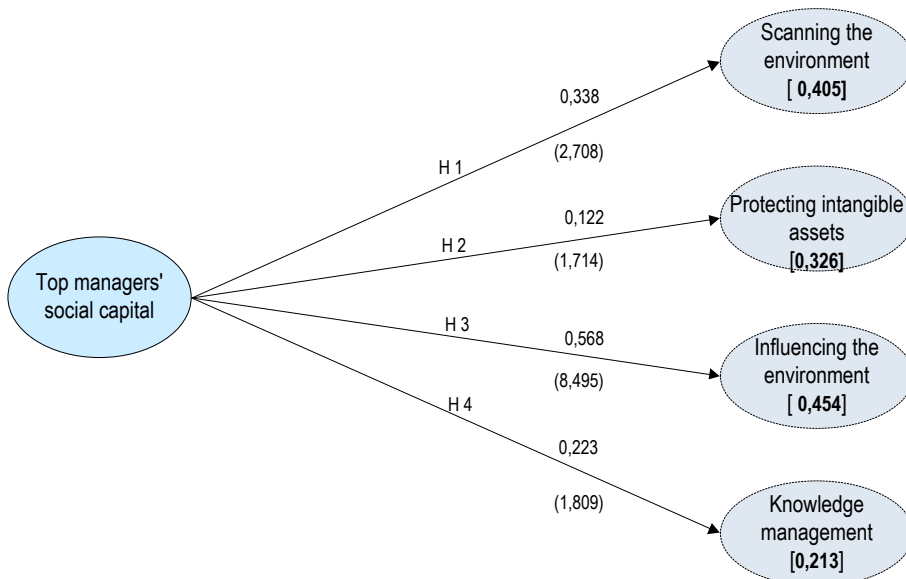
The exploratory model of the strategic versatility of CI practices is estimated by appreciating, on the one hand, the percentage of explained variance (R<sup>2</sup>) for each of the latent variables explained and, on the other hand, the value of path coefficients. In order to ensure the stability of these estimations, t stats produced through bootstrap resampling were examined. All the results of the model are presented in Table 6 and then are more specifically detailed for each of the model's hypotheses.

Hypothesis	R <sup>2</sup>	Path coefficient	Level of significance	Conclusion for the hypothesis
<b>Positive effect on environmental scanning practices:</b> ➤ Of the top managers' social capital (H1)	<b>0.405</b>	0.338	0.00	Confirmed
<b>Positive effect on practices designed to protect intangible assets:</b> ➤ Of the top managers' social capital (H2)	<b>0.326</b>	0.122	0.04	Confirmed
<b>Positive effect on initiatives to influence the environment:</b> ➤ Of the top managers' social capital (H3)	<b>0.454</b>	0.568	0.00	Confirmed
<b>Positive effect on knowledge management practices:</b> ➤ Of the top managers' social capital (H4)	<b>0.213</b>	0.223	0.03	Confirmed

**Table 1.** Table summarizing results of estimations of the influence of social capital on CI practices

Considering the results presented in Table 1, the percentage of explained variance for each of the model's variables is satisfactory. Moreover, the four hypotheses tested have been confirmed:

- ✓ **H1 is confirmed<sup>3</sup>:** *The social capital of top managers positively influences the development of environmental scanning practices (Student's t-test [2.708]).*
- ✓ **H2 is confirmed:** *The social capital of top managers positively influences the development of practices designed to protect intangible assets (Student's t-test [1.714]).*
- ✓ **H3 is confirmed:** *The social capital of top managers positively influences the development of practices designed to influence the environment (Student's t-test [8.495]).*
- ✓ **H4 is confirmed:** *The social capital of top managers positively influences the development of knowledge management practices (Student's t-test [1.809]).*



**Figure 2.** Explanatory effect of top managers' social capital on the development of CI practices (*path coefficient and t value; [R<sup>2</sup>]*)

### Contributions

Our study reveals that the social capital of top managers explains the development of CI practices in SMBs. While the literature agrees on the importance of relational assets in developing CI practices (Bulinge, 2002; Larivet, 2004; El Mabrouki, 2007), the interest of our work lies in, on the one hand, explaining, specifying and confirming that the social capital of top managers, understood as a global set of relational, participation and trust assets, directly intervenes in the development of

<sup>3</sup> We confirm the hypotheses at a significance level of 5% - a threshold of significance at 10% could have been used, but would have made the conclusions produced by the results less robust.



intelligence gathering practices. This element therefore means that information collected by top managers through participation in networks feeds the CI processes of their organizations.

The social capital of top managers in SMBs directly influences the development of practices intended to influence the environment. The results distinctly show that the social capital of top managers serves the influence strategies and initiatives of SMBs. They pinpoint and corroborate the determinants of influence practices in the specific case of SMBs (Larivet, 2009; Le Roy and Salvetat, 2008), and concretely illustrate how, and in which conditions, a corporate manager takes advantage of the resources offered practically and immediately by social networks (Chung, 2000; Arrégle et al., 2004; Comet, 2006; Barlatier et Thomas, 2007).

In view of tests of the model, knowledge management practices in SMBs are influenced by the social capital of top managers. It significantly affects the development of knowledge management practices. Indeed, while managers use their social networks to acquire new knowledge and skills through relations with managers of other firms in the same business sector or related fields, they simultaneously perform real transfers of capitalization practices and knowledge management within their organizations. Transfers of practices contribute to a learning dynamic within the firm by integrating, via adjustment and modification, knowledge management practices that have already been set up.

### **Limits**

Since this study concerns competitive intelligence, its first limitation is conceptual and concerns the empirical boundaries of these practices. Our review of the literature indicates that previous research does not offer or refer to a theoretical model of competitive intelligence. This aspect therefore induces a limited generalization of the results obtained.

The second limitation concerns access to and cooperation of top managers of SMBs which is difficult to obtain due to their distrust of questions concerning their CI practices. This major drawback meant estimating a theoretical model based exclusively on a single data set, since it was impossible to collect several samples. This limitation therefore means that, despite the satisfactory results obtained when testing the model, the use of the measurement instruments in other fields would require that their quality be confirmed again.

The third limitation of this study is directly linked to the field of application in SMBs in IT, electronics, telecoms, imagery and multimedia. Indeed, SMBs in these sectors have, due to the nature of their business, an ICT culture that works well with certain CI practices, particularly scanning and knowledge management. Consequently, the results of this study are only valid for SMBs in this sector.

Similarly, our field of application is limited to CI practices in SMBs. The results obtained cannot be generalized to all types of firm.

Furthermore, a fourth limitation of this research concerns the choice of a PLS approach to estimate and test the associated structural equations model. This method of estimating structural models is still not widely used in research concerning strategy, which meant that the researcher was perhaps less objective in his choice of validation procedures and the means of applying the PLS approach. Thus the validity of the results obtained must be put in perspective in light of a method that, despite its recent developments, is not completely stable. More specifically, the overall quality of the model of the strategic versatility of CI practices has not been estimated.

## Conclusion

This paper aims to corroborate the influence of SMB managers' social capital on the development of CI practices through an empirical study conducted with top managers of 193 SMBs in western France. The test of the theoretical model confirms the explanatory influence of social capital on each type of CI practice we have identified via an analysis of the existing literature. The social networks of top managers, as well as their means of development and longevity, are the basis of a plurality of institutional, economic and political relationships maintained between an SMB and its direct environment. The social fabric of SMB managers therefore constitutes a strategic resource in and of itself that is conditioned and updated through the CI practices of their organizations.

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