



PR
42,2

134

Received 23 May 2011
Accepted 24 February 2012

Managerial social networks and strategic flexibility: the role of strategic orientation

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Abstract

Purpose – This paper aims to examine how the characteristics of CEOs' social networks, such as the size of the network and the strength of the ties, influence strategic flexibility from a strategic orientation perspective. External social networks can affect strategic flexibility positively. Different orientations could have repercussions for the relationship between external social networks and strategic flexibility.

Design/methodology/approach – The data came from surveys completed by the managers of 188 Spanish firms. The methodology used was regression analysis.

Findings – The authors observe that external social networks affect strategic flexibility positively, more strongly when the networks are greater in size. The sample was classified into three groups: conservative, intermediate and entrepreneurship firms. The authors find that other effects vary according to the kind of strategic orientation in the organization. Both findings support and extend social capital and network theory and flexibility literature.

Research limitations/implications – The interviews were held with Spanish CEOs, and the character of the research was cross-sectional. This could have implications for the generalizability of the findings.

Originality/value – The authors' results extend previous research not only by highlighting the importance of CEOs' social networks in driving strategic flexibility but also by indicating how different strategic orientations either enhance or inhibit this relationship.

Keywords External social networks, Strategic flexibility, CEO, Strategic orientation, Social networks, Flexibility

Paper type Research paper

1. Introduction

As a result of their turbulence, current environments require more information and knowledge. Organizations must perform the strategic changes necessary to find timely solutions to solve the problems they face (Shimizu and Hitt, 2004). Given these unstable environmental conditions, a firm's ability to change direction quickly and to reconfigure strategically is crucial to its success in achieving sustainable competitive



advantage (Hitt *et al.*, 1998). In other words, firms need to embrace strategic flexibility (Hitt *et al.*, 1998; Johnson *et al.*, 2003). It is therefore not surprising that the literature in strategic management is increasingly recognizing strategic flexibility as an important research area.

Nevertheless, several gaps remain in scholars' understanding of how firms embrace strategic flexibility. One particularly prominent gap relates to the role of CEOs in fostering strategic flexibility. A great deal of the research that has examined the influence of resource, product and alliance network structures on strategic flexibility (Sánchez, 1995; Worren *et al.*, 2002) has ignored the role of CEOs in developing strategic flexibility. This gap is especially notable because the strategic choice (Child, 1972) and upper echelon (Hambrick and Mason, 1984) perspectives have highlighted the importance of top managers, especially CEOs, in driving strategic changes in firms (Rajagopalan and Spreitzer, 1997). The CEO has been characterized as a firm's chief cognizer and decision maker (Calori *et al.*, 1994). Hambrick and Mason (1984) argue that the firm's strategies reflect the characteristics of its most powerful actors, among whom the CEO is prominent. Moreover, empirical evidence has suggested that personal and social characteristics of CEOs affect strategic decision processes (McDonald and Westphal, 2003; Zaheer and Bell, 2005) and strategic actions (Geletknycz and Hambrick, 1997) that have implications for organizational performance. However, these studies have examined neither the influence of the CEO's egonetworks on firm performance and capabilities nor the mechanisms that underlie this relationship. In this study, we focus on the social capital developed by the CEO through personal social networking relationships with external entities (CEOs' egonetworks) and the repercussions that these networks may have for firm strategic flexibility. These networks function as conduits for the transmission of information, resources and opportunities that could be leveraged to a firm's advantage (Gargiulo and Benassi, 2000).

The term social network refers to "the pattern of ties linking a defined set of persons or social actors" (Seibert *et al.*, 2001, p. 220). We theorize that social networks of CEOs serve as links to the environment through which CEOs subjectively view strategic situations and decide on appropriate responses by shaping their fields of vision, interpretation and decision-making. These social mechanisms influence a CEO's strategic choices, either enhancing or inhibiting strategic flexibility in a dynamic industry context (Liebeskind *et al.*, 1996). CEOs' social networks will be able to undertake new initiatives to react faster to changing market conditions and possibly make higher-quality decisions, because decisions are made closer to the relevant information and knowledge (Andersen, 2004). Specifically, our research tests whether two social network characteristics – size of the network and strength of the ties – provide different benefits resulting from the social structure that can be mobilized to facilitate action (Adler and Kwon, 2002; Anderson, 2008) in ways that have repercussions for strategic flexibility.

Finally, we analyze whether strategic orientation moderates the previous relationship. Strategic orientation is a collection of decisions by means of which CEOs attempt to adapt the enterprise to its environment. CEOs interpret specific environmental changes as threats or as opportunities, and these interpretations affect which strategic responses the CEO prefers (Finkelstein and Hambrick, 1996). Strategic orientation may thus condition the need for more or less strategic flexibility and as a result of it, the need for attention to and acquisition and use of different types and amounts of information and knowledge could vary (Anderson, 2008; Ibarra, 1995).

Shimizu and Hitt (2004) stress the importance of timely, effective interpretation of information and knowledge in developing strategic flexibility. This informational resources could be catch through social networks. So, different strategic orientations may influence the relationship between the characteristics of social networks and strategic flexibility.

To sum up, our analysis first examines the influence of network size and the strength of the ties in social networks on strategic flexibility and the moderating role of strategic orientation in these relations. The relatively slight attention paid in practice to these topics contrasts with their importance for technicians and practitioners in firms. Previous studies have neglected the role of CEOs in the development of strategic flexibility. We then present the results obtained and discuss them. Finally, we present the main conclusions and limitations of the study, as well as the most significant lines for future research.

2. Conceptual development

2.1 Strategic flexibility

Strategy scholars have defined strategic flexibility as a firm's ability to precipitate strategic changes (Evans, 1991; Harrigan, 1985). Aaker and Mascarenhas (1984) define it as the ability to adapt to substantial, uncertain, rapidly occurring environmental changes that impact firm performance significantly. Thus, strategic flexibility reflects a firm's ability to respond continuously to unanticipated changes and to adjust to unexpected consequences of predictable changes (Lei *et al.*, 1996).

Most studies of strategic flexibility have focused on technology (Evans, 1991; Sánchez, 1995; Worren *et al.*, 2002) and resources (Harrigan, 1985; Young-Ybarra and Wiersema, 1999) as antecedents. For example, Sánchez (1995) finds that product and process platform architectures drive strategic flexibility, whereas Evans (1991) focuses on the effects of technological manoeuvres. Asset specificity (Young-Ybarra and Wiersema, 1999) and immobility of resources (Harrigan, 1985) have also been identified as antecedents of strategic flexibility. These studies have ignored the influence of CEOs on strategic flexibility. We propose that CEOs' egonetworks influence strategic flexibility.

2.2 Social networks

The external social networks of CEOs, defined as the systems of relationships that top managers have with other actors outside their organization (Collins and Clark, 2003), are widely recognized as a crucial determinant of their access to information and knowledge (Gulati *et al.*, 2000). Social capital theory postulates that networking relationships provide value to actors (e.g. individuals, organizations or communities) by allowing them to tap into the resources embedded in such relationships for their benefit (Bourdieu, 1986; Lin, 2001). Early usage of the concept of social capital focused on how the resources acquired by an individual through the development of close social relationships and networks influence his/her behavior (a micro-micro link). This argument has been extended to organizations (a micro-macro link) (e.g. Baker, 1990; Gulati, 1995). The top managers of an organization can develop social capital through a variety of personal, social and economic relationships with their suppliers, customers, competitors, trade or employee associations, government's political institutions and community organizations. This capital can then be used for the benefit of their organizations.

Two important characteristics of the structure of social networks are the size of the network and the strength of the ties (Anderson, 2008; Cross and Cummings, 2004; Gabbay and Leenders, 2001). Network size is important because each connection that a person has represents an information channel. When a person takes into account the opinions of different audiences, he or she is better prepared to anticipate different contingencies (Burt, 2004; McDonald *et al.*, 2008; Reagans and Zuckerman, 2001). This can favor the emergence, combination or recombination of good new ideas and actions (Obstfeld, 2005). Thus, CEOs who use more information sources have greater access to competitive ideas and opportunities and better results (Dussauge *et al.*, 2000; McEvily and Zaheer, 1999; Zaheer and Bell, 2005; Zaheer and Zaheer, 1997).

Another key aspect of networks that affects information flows is the strength of the ties. Strong networks facilitate the exchange of detailed information (Krackhardt, 1992; Uzzi, 1996), due to the fact that these networks are characterized by frequent interaction, a common history and mutual trust (Anand and Khanna, 2000; Granovetter, 1982, 2005). However, such networks require more maintenance, which implies that the volume of information will be smaller and probably redundant.

2.3 External managerial social networks and strategic flexibility

Strategic flexibility can be defined as an organization's capability to identify major changes in external environments and to commit resources quickly to new courses of action in response to change (Shimizu and Hitt, 2004). The development of networking relationships with top managers of other firms, clients or suppliers may, for example, enable CEOs to acquire resources, valuable information and knowledge that they can use to mitigate uncertainties and help in making the best decisions by taking into account the external environment and internal possibilities of implementing strategic actions successfully, thereby enhancing strategic flexibility.

We propose that different characteristics of social networks, such as size of networks and strength of ties, may have different implications for strategic flexibility from the perspective of the social capital they provide. The network literature suggests that large networks will foster strategic flexibility through broad scanning, speedy diagnosis and simultaneous consideration of strategic alternatives. Large social networks generate a greater variety of perspectives and stimulate criticism, since they have more access to new and diverse information and knowledge (Rodan and Galunic, 2004) and advice for problem solving (Gibbons, 2004; Sparrowe and Liden, 2005). For example, relations with suppliers or customers will provide access to quality information, superior service, and fast and reliable deliveries (Peng and Lou, 2000). Larger networks allow CEOs to notice and respond to more stimuli (Campbell-Kelly *et al.*, 2008) through heterogeneous information and knowledge (Rodan and Galunic, 2004), reducing the gap between real and provided adaptation to the environment. CEOs who fail to notice important environmental changes are unlikely to adjust the firm's strategic actions (Lant *et al.*, 1992). Large networks enable firms to develop a comprehensive awareness of new opportunities and thus to develop new resources and change their competitive posture quickly. Larger networks promote more extensive discussion of strategic choices (Lant *et al.*, 1992), reducing the likelihood of cognitive inertia (Hodgkinson, 1997; Reger and Palmer, 1996) and status quo behavior (Miller and Chen, 1996) that inhibit strategic flexibility.

The dual nature of strong ties has been demonstrated (Ahuja, 2000). Strong ties have a negative effect on some organizational capabilities and output, particularly on

innovation (Ahuja and Lampert, 2001). They can, however, lead to better results (Lorenzoni and Lipparini, 1999; Zaheer *et al.*, 1998) and competitive capacities (McEvily and Marcus, 2005) in other situations. The quality, trust and exclusivity concerning the information and knowledge derived from these ties makes them valuable and positive in helping the organization to respond to certain contexts (Dyer and Nobeoka, 2000; Kraatz, 1998; Geletknycz and Hambrick, 1997). For example, networking relationships between CEOs and their key customers and suppliers facilitate the creation, acquisition, and exploitation of knowledge (Dyer and Nobeoka, 2000; Yli-Renko *et al.* 2001). Ties with competitors may lead to collaboration and implicitly to working together to confront competitive uncertainties in their environment (Park and Luo, 2001) (see Figure 1). This leads us to articulate the following hypothesis:

H1a. In external social networks of managers, larger network size will be positively related to somewhat higher levels of strategic flexibility.

H1b. In external social networks of managers, greater strength of ties will be positively related to somewhat higher levels of strategic flexibility.

2.4 Strategic orientation

In the context of decision making, strategies are formulated to adapt to, respond to and share the environment. A strategic orientation will enable the firm's proper adaptation to its environment (Miles and Snow, 1978) through the implementation of strategic behaviors that help it obtain results superior to those of the competition. Different competitive orientations require different sets of specific skills and resources (Porter, 1980), which are usually associated with different firms' outcomes and capacities (Zajac and Shortell, 1989).

There are many classifications of strategic orientations based on firms' strategic actions (Miles and Snow, 1978; Porter, 1980; Wright *et al.*, 1995). A theoretical review shows, however, that strategic orientation can be analyzed from perspectives at two extremes of a spectrum (Covin and Slevin, 1989). At one extreme, we find that entrepreneurial attitudes characterized as innovative, exploratory and favorable toward change help the firm to obtain competitive advantages and to compete aggressively with other firms. At the other extreme, we find conservative attitudes. Here, managers show greater risk aversion and resist changes and innovative proposals. These managers show great interest in optimizing the resources available, focusing their search for competitive advantage on efficiency.

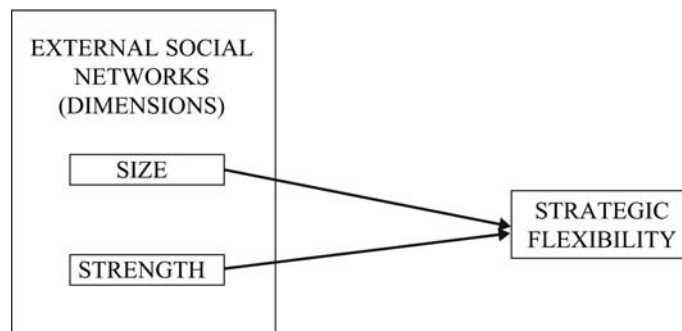


Figure 1.
The effect of external social networks on strategic flexibility

Different strategic orientations are usually associated with more or less flexible actions (Huff, 1982) as strategic responses to the environment. Entrepreneur firms may react very quickly to the first sign of new needs and opportunities in the market or even induce them (Agora and Gambardella, 1994). Conservative organizations work in more stable environments and are not usually watching the market. Consequently, it is logical to propose that strategic orientation moderates the relation between social networks and strategic flexibility. Strategic orientation could condition CEOs' interest in or need to obtain information and knowledge from their networks to translate it into more or less flexible actions. Entrepreneur organizations probably will use their social networks more to obtain a large quantity of information and multiple opportunities (Burt, 1992; Li *et al.*, 2008). The CEO's social networks are less important to conservative firms (Zajac and Shortell, 1989).

This study will attempt to observe whether the effects included in Hypothesis 1 differ depending on whether the organizations observed have different strategic orientations. We thus propose the second hypothesis:

- H2.* The effect of the dimensions of external social networks of managers (size and strength) on organizational strategic flexibility will differ depending on the strategic orientation.

3. Research methods

3.1 Sample and data collection

The context chosen to test these hypotheses is the geographical region of Spain. We selected this area to minimize the impact of variables that we cannot control in the empirical research. The literature recommends selecting a sample of firms located in a relatively homogeneous geographical, cultural, legal and political space (Adler, 1983; Hofstede, 1980).

We conducted systematic random sampling of 900 companies from a mailing list, Dun & Bradstreet España. The search criteria are: medium-sized and large manufacturing and service firms, as defined by the guidelines of the Fourth European Directive (2009)[1]. Because our research focuses on perceived strategic flexibility, we chose CEOs as the key informants.

The questionnaire was pre-tested by three Spanish managers. The procedure for data collection consisted of sending the definitive questionnaire by mail or email. We received 188 valid questionnaires, giving an overall response rate of 20.8 percent.

Using the same database, we checked for non-response bias. The database also provided the archival data on the annual sales incomes and number of employees of the responding firms and a sample of non-responding firms. The mean differences between the responding and non-responding companies for these variables were tested using an unpaired *t*-test. The results demonstrated that all *t*-statistics were non-significant at the level of 0.05. Since the questionnaire was answered by a single informant, we also checked for common method bias using Harman's one-factor test. A principal factor analysis of all measurement items yielded seven factors with eigenvalues larger than one. These factors accounted for 52 percent of the variance. Since the first factor accounts for 21 percent of variance (less than half of the variance explained by the set of factors with eigenvalues greater than one), common method variance is unlikely to be a serious problem in the data (Podsakoff and Organ, 1986).

3.2 Definition of the variables

Independent variable. External social networks of managers. External social networks of managers were measured observing the size and strength of the ties that they maintain with their contacts (Anderson, 2008; Collins and Clark, 2003) in seven categories: board directors same industry, board directors other industries, suppliers, clients, financial institutions, competitors and other companies' partners. The *size* of the network refers to the number of the director's contacts that give him/her relevant information and knowledge (see the Appendix). To measure this rate, we asked directors to identify the number of their relevant contacts for each of the seven external categories (Collins and Clark, 2003; Hansen, 1995), using a Likert-type scale of seven points where 1 indicates "none", 2 "few (1-3)" and 7 "many (>25)" to respond to the following question: "On average, how many people are important sources of information and knowledge regarding important business or industry trends and issues?" (Cronbach's alpha = 0.841). Tie strength was operationalized as an index measuring frequency of communication or interaction and intensity of trust in the relationship (Burt, 1997; Fischer, 1982; Hansen, 1999; Marsden and Campbell, 1984; Reagans and McEvily, 2003). The frequency of the relationship was provided through the responses to the question: "On average, how often do you communicate with the people in each category?" Trust was measured through the response to the question: "On average, how would you characterize your relationship to each category?" For these cases, we provided a seven-point Likert scale to which the top managers could respond. For frequency, 1 indicated "very infrequently" and 7 "very often". For trust, 1 indicated "distant" and 7 "trustworthy". Strength was measured jointly as the average of the standardized values of frequency of the relationship and emotional intensity (Collins and Clark, 2003, Granovetter, 1973) (Cronbach's alpha = 0.71).

Dependent variable. Strategic flexibility. We used the scale developed by Verdú-Jover *et al.* (2004). This scale synthesizes the contributions of Volberda (1996, 1998) and is appropriate because the perspectives of the studies are similar. Our research is based on a large number of firms and performs cross-sectional analysis. Finally, managers had to indicate their level of agreement or disagreement with the statements, using a seven-point Likert-type scale (Cronbach's alpha = 0.865).

Classification variable. Strategic orientation. The CEOs classified their firms into three groups (conservative, intermediate and entrepreneurs) based on the subjective perception they had of their organizations. The respondents were then asked to distribute 100 points across four categories – market penetration, new market development, product/service refinement and new product/service development (Zajac and Shortell, 1989). To differentiate between groups with different strategic orientations, we carried out a cluster analysis[2], which differentiated clearly between three groups of firms. Those directors who described their organization as concentrating on current services and markets were identified as conservative. Directors who viewed their firms as usually the first to develop new markets and services were considered entrepreneurs. The rest of firms were classified as intermediate. The data in the analysis agreed with the categories chosen previously by the CEOs.

Control variables. We used a firm demographic characteristic (*firm size*), a firm resource variable (*R&D intensity*), a CEO demographic variables (*CEO age*), and *TMT size* as controls (Carpenter *et al.*, 2001). Large companies have a greater number

of advantages due to their resources (Barney, 1991). We therefore include size as the control variable. To make organizational size operational, we used the number of employees and income level simultaneously as proxy variables. High R&D intensity (R&D expenses divided by sales) implies heavy investment in innovation, which drives searches for new ideas and new ways of doing things in the future (Rajagopalan and Datta, 1996). It is likely to foster strategic flexibility. Greater CEO age has been associated with rigidity and resistance to change, whereas lower CEO age has been associated with aggressive strategic change (Wiersema and Bantel, 1992). Therefore, younger CEOs are likely to drive strategic flexibility, whereas older CEOs are likely to inhibit it. The greater the size of a firm's TMT, the greater the diversity of skills and perspectives it contains, and this diversity is likely to stimulate strategic flexibility (Eisenhardt and Schoonhoven, 1990). Following previous TMT research (Judge and Miller, 1991), we measured TMT size by asking each CEO to list the key managers who participated actively in strategic decisions.

4. Data analysis

4.1 Sample distribution

We began the investigation by dividing the total sample obtained ($n = 188$) into the three groups identified by a cluster analysis. The first group (Group 1) was composed of 37 conservative firms. The second group (Group 2) included 85 intermediate organizations. The third group (Group 3) included 66 entrepreneur firms. In addition to using ANOVA analysis (see Table I), we compared the means of the three groups to all variables observed – size and strength of external social networks and strategic flexibility (Table II). This test enabled us to confirm that the variables observed generate significant differences among the three groups (Table III).

Variable	<i>F</i>	<i>p</i> -value
Size	7.822*	0.001
Strength	6.793*	0.001
Strategic flexibility	15.025*	0.000

Note: * $p < 0.01$

Table I.
ANOVA analysis
between Group 1
(conservative firms),
Group 2 (intermediate
firms) and Group 3
(entrepreneur firms)

Variable	<i>n</i>	Mean	SD
Size (Group 1 = Conservative firms)	37	2.87	0.9155
Size (Group 2 = Intermediate firms)	85	4.30	0.9664
Size (Group 3 = Entrepreneur firms)	66	4.48	1.0201
Strength (Group 1 = Conservative firms)	37	3.51	0.7785
Strength (Group 2 = Intermediate firms)	85	4.42	0.6031
Strength (Group 3 = Entrepreneur firms)	66	3.83	0.7673
Strategic flexibility (Group 1 = Conservative firms)	37	4.51	0.7963
Strategic flexibility (Group 2 = Intermediate firms)	85	6.35	0.9378
Strategic flexibility (Group 3 = Entrepreneur firms)	66	6.12	0.9720

Table II.
Means and standard
deviations by groups



4.2 Regression analysis

Once we confirmed that the variables studied generate significant differences according to the group analyzed, we proceeded to study the relations of the variables amongst themselves. To do this, we performed a regression analysis, observing named, linearity, homoscedasticity and normality of variables. We used partial regression plots, residual plots and Levene's test and normal probability plots, respectively, to confirm these assumptions. The results show that all assumptions can be confirmed. Finally, the correlations that appear among the dependent and independent variables show that the aggregation grouping of the variables performed is appropriate (see Table III). Few effects are correlated significantly, but this result is to be expected when one uses this type of social data (Collins and Clark, 2003; Wincent *et al.*, 2010).

Table IV shows the results of the complete moderated hierarchical regression analysis (Cohen and Cohen, 1983), introducing the moderating effect as a multiplicative variable. Before creating the multiplicative terms, we then fixed both the independent and the moderating variables on their means to avoid multicollinearity (Venkatraman, 1989). In the first model, the control variables were entered. In the second model, we introduced the independent variables, size and strength. In the third model we added the direct effects of the different strategic orientation groups. These were introduced as a two-category dummy variable, enabling us to compare the differences between the three groups. Finally, the moderating effects of these three variables appeared in the last model.

As Table IV shows, the control variables used in Model 1 affect strategic flexibility negatively, whereas the number of workers and R&D intensity affect it positively, as predicted. Nevertheless, we must stress that only R&D intensity maintains this positive and significant effect when the other variables are introduced, a result we also expected, since their effect is generally a determinant for effective levels of strategic flexibility. When the dimensions of the networks are introduced in Model 2, only the variable size of network is significant and positive ($\beta = 0.256$, $p < 0.001$). Strength may not have direct effects on strategic flexibility. *H1a* is thus supported, but *H1b* is not. In model 3, we found significant positive differences between the groups with different strategic orientations regarding strategic flexibility. Firms with intermediate and entrepreneur strategic orientations are associated with higher levels of strategic flexibility than conservative firms. We also found significant positive moderating effects of intermediate and entrepreneur strategic orientation on the relationship between size of networks and strategic flexibility (*H2*).

Variable	Mn	SD	1	2	3	4	5	6	7
1 Billing volume	6.78	1.97							
2 No. of workers	3.07	1.50	0.511**						
3 Age	25.40	9.66	-0.104	0.047					
4 No. council members	5.66	5.27	0.415	0.574**	-0.061				
5 R&D intensity	1.39	0.62	0.122	0.267	-0.050	-0.309			
6 Network size	2.59	1.70	0.172*	0.015	-0.197	0.126	0.422**		
7 Network strength	2.85	0.77	0.179*	-0.129	0.067	-0.096	0.329**	0.471**	

Notes: * $p < 0.05$; ** $p < 0.01$, $n = 188$

Table III.
Means, standard
deviations and
correlations



Variables	Strategic flexibility			
	Model 1	Model 2	Model 3	Model 4
Constant	2.889*** (5.852)	2.390*** (4.878)	1.818*** (4.133)	1.912*** (3.658)
Billing volume	0.104 (1.353)	0.051 (0.673)	0.065 (0.968)	0.065 (0.967)
No. of workers	0.189* (2.215)	0.189* (2.289)	0.103 (1.384)	0.088 (1.159)
Age	-0.249*** (-3.832)	-0.211*** (-3.267)	-0.117* (-1.577)	-0.120 (-1.986)
No. council members	0.074 (0.939)	0.044 (0.577)	-0.022 (0.577)	-0.018 (-0.262)
R&D intensity	0.563*** (8.295)	0.430*** (5.913)	0.372*** (5.913)	0.394*** (5.951)
Size		0.256*** (3.296)	0.184** (3.296)	0.717* (2.661)
Strength		0.054 (0.727)	0.063 (0.968)	0.162 (1.381)
Interm strategy			0.389*** (4.404)	0.389*** (3.527)
Entrep strategy			0.530*** (6.746)	0.634*** (4.372)
Size X cons str				0.445 (1.886)
Size X inter str				0.886* (2.143)
Size X entre str				0.651* (2.034)
Strength X cons str				0.381 (1.479)
Strength X inter str				0.939 (1.793)
Strength X entre str				0.918 (1.579)
R^2	0.397	0.457	0.586	0.606
Adjusted R^2	0.377***	0.431***	0.561***	0.563***
F	19.759	17.773	22.969	14.337

Notes: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Table IV.
The effect of external
social networks on
strategic flexibility

In conclusion, *H1a* is accepted, but there are differences in the effects of the variables size and strength on strategic flexibility, depending on the strategic orientation. Based on this result, we can also accept *H2* partially.

5. Conclusions, limitations and future lines of research

5.1 Conclusions

Belief that results are related to the intensity and kind of CEO social networks in the organization has continued to inspire questions and research by professionals and academics. Many studies indicate the need to analyze empirically the causal connections between CEOs' social networks and results (e.g. Anderson, 2008). However, as Liebeskind *et al.* (1996) noted, there are remarkably few applications of social capital perspective to strategic flexibility, and little has changed. Our study pursues such questions, using empirical data to analyze the influence of CEOs' social networks on strategic flexibility.

The first contribution of our empirical study, taking into account the different characteristics of networks, demonstrates that size has a positive and significant effect on strategic flexibility, as we proposed. These results show that greater size ensures excellent opportunities to take advantage of information obtained for flexible actions (Acquaah, 2007; De Clercq and Dimov, 2008). However, strength of ties shows an interesting neutral effect on strategic flexibility. Previous studies of this characteristic on other capabilities (for example, learning or innovation) have shown either positive or negative effects (Ahuja and Lampert, 2001; Dyer and Nobeoka, 2000). We show, however, that this characteristic does not have any special relationship with respect to strategic flexibility.

In comparing the three groups, we first find that they are associated with different levels of flexibility. Strategic flexibility is greater for entrepreneur and intermediate than for conservative firms. According to the theoretical reasoning followed, it seems logical that a lower degree of development in entrepreneurial elements leads to a lower degree of development of strategic flexibility.

If we analyze the effects of different characteristics of social networks on strategic flexibility in each of three groups (see Table IV), we observe important differences. For conservative firms, any characteristic affects strategic flexibility. This may be due to the fact that the firm maintains a relatively stable range of products/services in which the company specializes. It is not generally up to date on innovations and tends to ignore any change that is not affecting it directly. Under these conditions, strategic flexibility is not a priority. Consequently, social structure has neither special interest as an information and knowledge provider nor effects on strategic flexibility.

In the other two groups observed, size of networks affects strategic flexibility positively and significantly in both groups. As we proposed, a greater number of contacts generates a higher number of points-of-view, which contributes to knowing more and new ideas (Obstfeld, 2005). This knowledge can increase the firm's capacity to adapt and change in response to the environment, and thus ultimately its strategic flexibility. For intermediate and prospector firms, these results could explain why such firms make frequent changes, constantly trying to be the first to explore new areas of activity. Such interests are better satisfied by the resources provided by a large network, which facilitates new information and knowledge. They play an essential role in the discovery of opportunities and dissemination of information (Singh, 2000).



To summarize, the second contribution is that the impact of social structures on strategic flexibility differs between firms depending on the different competitive strategic orientation. The results show that the relationship between external social networks and strategic flexibility differs depending on the strategic orientation. In short, social networks are important for strategic flexibility in market-oriented companies (Shimizu and Hitt, 2004), which need to monitor the environment and react more quickly strategically. In general, our information reinforces the importance of social networks, which can come to be crucial strategic assets to access to information and knowledge (Kang, 2008; Sharir and Lerner, 2006).

Our study provides important prescriptions for practice concerning the importance of relationships between social relationships, strategic orientation and strategic flexibility. One prescription is that firms could develop social networks, especially larger ones to promote strategic flexibility. However, CEOs and firms need to develop social networks appropriate to their competitive interests, needs or strategic orientation, remaining conscious of the fact that social networks have different potential benefits but also significant costs (time, resources, etc.) (Adler and Kwon, 2002). CEOs' networks could be significant for the choice, training or remuneration of CEOs (Collins and Clark, 2003; Geletknycz *et al.*, 2001; Jensen and Roy, 2008; Sumelius, 2009). The appropriate level of strategic flexibility can be implemented through the board of directors' selection of the "right" CEO with "right" social networks.

Second, CEOs should make adaptation to the environment a central element of strategic intention by investing in it (Verdú-Jover *et al.*, 2006) and speaking publicly about it, eliminating negative group dynamics that might impede necessary strategic changes and establishing positive dynamics to inspire collaborative actions. Strong commitment is needed to manage and disseminate the strategic changes and process on all levels of the firm (Bozionelos, 2008).

Third, the CEO's support for strategic flexibility is critical both inside and outside the organization. Inside the organization, the CEO focuses on creating a context favorable to strategic flexibility, allocates resources and assumes the structure and culture that nourishes the development and implementation of changes. The CEO should be a good leader and mentor. Outside the organization, the CEO plays an essential role in linking the organization to its environment by gaining acceptance (consumers, clients, other interest groups) and support (resources, knowledge, laws) for strategic flexibility (Van de Ven, 1993).

5.2 Limitations and future research

This investigation has several limitations that may suggest further possibilities for empirical research. First, survey data based on self-reports may be subject to social desirability bias (Podsakoff and Organ, 1986). However, an assurance of anonymity can reduce such bias even when responses are related to sensitive topics (Konrad and Linnehan, 1995).

Second, the absence of objective measures is a limitation. However, the external validation of these variables from the archival data of a subset of respondents increased confidence in the self-reports and reduced the risk of common method variance. Further, the possibility of common method bias was tested using Harman's single factor test and other methods. We also used objective data and randomized the



order of presentation of the survey items across the subjects. Common method bias does not appear to be present (Podsakoff and Organ, 1986; Konrad and Linnehan, 1995).

Third, the cross-sectional nature of the research into a series of dynamic concepts allows us to analyze only a specific situation in time of the organizations studied, not their overall conduct through time. Our approach has reduced the magnitude of this problem, since dynamic characteristics and causal affirmations can be made if the relationships are based on theoretical rationales (Hair *et al.*, 1999). For this reason, we began with a theoretical effort that would allow us to identify and check the formal existence of the different cause-effect relationships. Nonetheless, future research should focus on longitudinal study.

Fourth, the use of a single respondent may have influenced the accuracy of some measurements. Although measures were taken to reduce data inaccuracies, the use of multiple respondents would have been preferable. However, difficulties in obtaining sponsorship for research based on a multiple views for each firm, the value of CEOs' knowledge of their firms, and common practice in organizational research all supported the use of CEOs as respondents.

Finally, this research has opened another possible research line to observe whether there are significant differences between the factors that influence strategic flexibility, based on the kind of QM initiative, absorptive capacity and internal cooperation in the organizations. Complex constructs like social networks require a great deal of study to grasp the different perspectives from which to enrich researchers' and managers' knowledge. Future research should develop more thorough analysis of the dimensions of social networks to guide decision making for managers. Our study contributes to the existing literature by affirming the need to integrate social networks into analysis of strategic flexibility, as such integration suggests a new way to determine organizational responsiveness through the measurement of strategic flexibility.

Notes

1. "Small" companies are companies that do not exceed the limits of two of the following three criteria (in million EUR): balance sheet total: < 5; annual sales: < 7 and number of employees: < 50. "Medium-sized" companies are companies that fulfill at least two of the following three criteria: balance sheet total: 5-27; annual sales: 7-40 and number of employees: 51-250. "Large" companies are companies that fulfill at least two of the following three criteria: balance sheet total: > 27; annual sales: > 40 and number of employees: > 250.
2. The cluster analysis was always performed starting from a Euclidean measurement of the distances. We first used two different hierarchical procedures (Ward's method and complete linkage, or farthest neighbor) and then a nonhierarchical method, "k-means". For the latter, the number of groups to be obtained was specified based on the results obtained in the hierarchical procedures. For choosing the number of groups, the procedure used in the k-means technique for specifying the number of groups consisted of seeking the option of the lowest possible number of groups that still permitted the greatest coincidences in the grouping of cases among the classification of the three methods ("Ward's", "complete linkage" and "k-means"), enabling significant differences in the point values for the groups.

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Further reading

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Appendix. Scales

External social networks: size and strength

Categories of external connections	On average, how many people are important sources of information regarding important business or industry trends and issues?						
	None = (0) (1-3) (4-5) (6-10) (11-15) (16-25) (>25) = Many 1 2 3 4 5 6 7						
Board Directors same industry							
Board Directors other industry							
Suppliers							
Clients							
Financial institutions							
Competitors							
Other companies' partners							
Categories of external connections	On average, how would you qualify your relationship with each category?				On average, how often do you communicate with each category?		
	Distant = 1 2 3 4 5 6 7 = Trustworthy				Very infrequently = 1 2 3 4 5 6 7 = Very often		
Board Directors same industry							
Board Directors other industry							
Suppliers							
Clients							
Financial institutions							
Competitors							
Other companies' partners							

Figure A1.
External social networks:
size and strength

Organization	Description	Orientation to change
A	It maintains a <i>relatively stable range of products/services</i> , intended for a cell of a certain market in which the company specializes. It is not generally up to date regarding innovations and <i>tends to ignore any change that does not affect it directly</i>	Low
B	It operates in two areas: <i>the first, a relatively stable area</i> , which acts in the same way as organization A (previous); and <i>the second, more changeable</i> , where it works on new products, services, markets, ... The former is, however, a rare exception, because this type of company usually prefers to control the shares of type C companies (next) and follow them quickly	Medium
C	It makes frequent changes, constantly <i>trying to be the first to explore new areas of activity</i> . It <i>reacts very quickly</i> to the first sign of new needs and opportunities in the market	High

Table AI.
Strategic orientation

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