International new ventures' international performance: a matter of network entrepreneurial orientation and network management activities

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Maria Ripollés and Andreu Blesa
Department of Business Administration and Marketing, Universitat Jaume I, Castellón, Spain

Abstract

Purpose – The purpose of this paper is to demostrate that commitment to developing knowledge sharing, coordination, adaptation and resolving potential conflict results in idiosyncratic relational assets for firms, which increases the benefits that international new ventures (INVs) can obtain from their networking activity.

Design/methodology/approach – To test the theoretical model, a survey was conducted among a sample of INVs. The data obtained were examined with structural equation modelling using the maximum likelihood estimation procedure in linear structural relations software.

Findings – The results showed positive effects of network entrepreneurial orientation (EO) on knowledge sharing, coordination, adaptation and resolving potential conflict, but only network coordination showed a positive effect on international performance.

Research limitations/implications – The study introduces and extends EO to the network level and shows that it contributes to INVs' international performance through its influence on the development of coordination activities among networked firms.

Practical implications – The results provide guidance for building INVs' networks. Entrepreneurs will find orientations about which partners could be more valuable to them.

Originality/value – Little research has addressed the study of network management activities to create a network structure. This paper reveals how firms' volition and commitment to networking helps us to understand, in a fine-grained manner, how INVs gain benefits from their social networks. Additionally, EO at the network level is also studied, and arguments are proposed showing its relationships with the aforementioned relational activities based on the fact that entrepreneurial-oriented partners are supposed to be more active in networking.

Keywords International new ventures, Network management activities, Network entrepreneurial orientation

Paper type Research paper

1. Introduction

For international new ventures (INVs), the extent to which an international opportunity is recognized, sensed and successfully reconfigured through entrepreneurial competence

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(Mishra and Zachary, 2015) largely depends on the social networks in which they participate (Bembom and Schwens, 2018; Cannone and Ughetto, 2014; Jones *et al.*, 2011). Scholars studying the role of these networks have mainly underlined the importance of different structural characteristics rather than firms' network management repertories (Afandi *et al.*, 2017; Liu *et al.*, 2009). Implicitly or explicitly, past research has supposed INVs to be calculative and instrumental when forming and activating their networks (Afandi *et al.*, 2017; Liu *et al.*, 2009; Stuart and Sorenson, 2007). It has recently been observed that this purposeful behaviour has its limits, highlighting the role of uncertainty in shaping network management activities (Sarasvathy *et al.*, 2014; Galkina and Chetty, 2015). If INVs cannot strategically shape their networks, the benefit that could be extracted from them derives mainly from partners' willingness to commit to their networks (Sarasvathy *et al.*, 2014; Galkina and Chetty, 2015).

In social networks, commitment cannot be approached under the safety net of formal agreements but rather it is embedded in civic engagement (Afandi *et al.*, 2017). However, the mechanisms by which INVs' partners assist others and bring their contributions to the network remain under-theorized (Bembom and Schwens, 2018). This raises some simple but surprisingly overlooked questions: how do INVs' social partners assist others? Through which network commitments or investments can they do so? Which factors contribute to the networked firms' engagement with these investments?

In this paper, we address these questions by suggesting that the extent to which INVs' network partners are prone to collaborate with one another and invest in their relationships is influenced by their entrepreneurial orientation (EO) as a critical enhanced condition. We also propose that INVs' network partners can contribute to INVs' international performance by establishing routines that facilitate the sharing of market knowledge, coordination, adaptation and conflict resolution among them. In particular, we add to the existing literature by drawing insights from the EO and effectual networking literature. We then consider the implications of incorporating collaborative network management activities into the INVs' international performance. In doing so, we extend past research in the network management literature that is mainly focused on dyadic interactions (Jones *et al.*, 2011) by considering network management from a more network-based perspective. Additionally, although the importance of the structural characteristics of social networks to explain network management is recognized (Gulati and Srivastava, 2014), this paper extends research in this area by highlighting the importance of EO at the network level (Wincent *et al.*, 2014) as a strengthening factor. This paper assumes the need to approach social networks from a *multiplexity* perspective (Bliemel *et al.*, 2014, 2016), adopts a dual focus as it centres on network characteristics and management, and explores their relationships in the context of INVs.

The next section provides the background literature in which the relationships between the EO at network level, network management activities and INVs' international performance are embedded. An explanation of the method used to analyse our hypotheses is then provided, followed by a discussion of the results. Finally, the conclusions, contributions to the literature, applied implications, limitations and proposed future research developments are presented.

2. Theory and hypotheses development

2.1 International entrepreneurship research on network management activities

Social networks can be defined as the set of ventures' direct, personal and non-formal ties and the relationships among those ties (Hite and Hesterly, 2001). Specifically, non-formal ties comprise relationships defined as implicit, not fixed by any legal arrangement

(Fernhaber and Li, 2013; Rank, 2008) and embedded in civic engagement (Afandi *et al.*, 2017). These networks are often described as "self-organizing" because no one appears to be in charge (Casson and Giusta, 2007), and therefore, a planned network goal cannot be identified in advance (Galkina and Chetty, 2015). Network participants have the general aim of building workable relations and invest in them with the hope of accomplishing that goal (Galkina and Chetty, 2015).

Networked firms can take advantage of their networks by increasing and sharing information, fostering inter-organizational and intra-organizational learning or exploiting new potential opportunities (Casson and Giusta, 2007; Cope *et al.*, 2007; Anderson *et al.*, 2007; Berg *et al.*, 2008). This is especially so for INVs. Because of their liabilities of newness (Aldrich and Yang, 2012) and foreignness (Denk *et al.*, 2012), INVs' knowledge stock is narrow and focused on a chosen market (Zahra and Filatotchev, 2004; De Clercq *et al.*, 2012). Thus, their capacity to create new market knowledge and nurture their evolution is limited, which can be made up for by their learning advantages of newness (Autio *et al.*, 2000), and social networks are an effective instrument that can be used by INVs to offset their limited market knowledge (Jones *et al.*, 2011).

Past research has assumed that different structural characteristics of networks constrain partners' actions (Gulati and Srivastava, 2014) but also that partners' ability to self-organize and adapt to changes within a network induces changes in the network structure itself (De Zubielqui *et al.*, 2016).

In this sense, different types of social networks have been said to be differentially effective for international entrepreneurs and INVs have been considered to be proactive and calculative in leveraging their networks (Afandi *et al.*, 2017; Liu *et al.*, 2009; Stuart and Sorenson, 2007).

Past research has implicitly or explicitly considered individual actions between partners in a dyad (Slotte-Kock and Coviello, 2010; Hoang and Antoncic, 2003). Dyadic actions are viewed as an ongoing process of action-evaluation-reaction, in which the reaction of one party may initiate a further reaction from another. According to this perspective, firms dynamically create, confirm, shape and terminate each dyadic interaction according to the associated benefits and costs (Biggemann and Buttle, 2009; Gummesson and Mele, 2010). Therefore, most of the strategies for managing network interdependence identified to date have been at the single relationship level (Bliemel *et al.*, 2016).

Dyadic management activities can increase our understanding on how networked firms can enlarge their resource endowments through their social networks (Jones *et al.*, 2011). This perspective, however, sees network relationships as unconnected and considers that the benefits of being part of a network are the sum of the benefits from networking with individual partners. Such reduction does not take into consideration the potential value of being connected with more than one tie, omitting the benefits of the synergic effects of the network (Bliemel *et al.*, 2016).

Careful consideration of past research has enabled us to increase our knowledge of the dynamics of networks, although we believe that a more fine-grained exploration of the relational activity inside networks is still needed (Liu *et al.*, 2009). Our literature review revealed the need to examine the synergic value of networking (Ritter *et al.*, 2004), the value of collective commitments to build workable social networks and how networked members invest in their networks with the aim of increasing the odds of future benefits (Galkina and Chetty, 2015). We are, therefore, referring to the need to explore not dyadic networking actions but collective network management activities.

2.2 Network management activities and international new ventures' international performance

Network goals cannot be planned and, consequently, it is not possible to study network management activities through the investments made by partners to develop relational activities directed towards achieving those goals (Galkina and Chetty, 2015). A more appropriate way to study network management activities is through partners' investments in network routines that help them deal with collaboration with one another and pave the way for future strategic alliances. Based on social exchange theories (Dyer and Singh, 1998; Gulati, 1995), we propose that network management activities can be approached through partners' commitment to developing routines that facilitate market knowledge sharing, coordination, adaptation and the resolution of social conflict with others (Liu *et al.*, 2009; Ripollés and Blesa, 2017).

Market knowledge-sharing routines can be defined as those voluntarily implemented by firms in the network, which enable them to gain knowledge from market information. Routines to coordinate activities among network members refer to paths that are established to facilitate the synchronization of network partners' actions (Mohr and Nevin, 1990). Coordination routines consist of establishing and using informal rules and procedures (Helfert *et al.*, 2002) to shape cooperation among networked partners and to co-create the network structure (Galkina and Chetty, 2015). Adaptation routines refer to the mechanisms adopted by the firms in a network to allow them to meet partners' special requirements (Helfert *et al.*, 2002), as each network member brings not only certain resources but also a set of constraints (Galkina and Chetty, 2015). Finally, the development of non-contractual constructive conflict resolution routines among the members of a network is related to the extent to which network partners have competing interests, preferences and practices that cannot be easily conciliated (Claycomb and Frankwick, 2010). Joint problem-solving routines lead to mutually satisfactory solutions, thereby improving relationship success (Mohr and Spekman, 1994).

Networked firms' investments in establishing routines to share market knowledge among them can provide INVs with an extended knowledge base (Glavas and Mathews, 2014). Knowledge sharing is a social process and language and rules of communication tend to meet in the interaction process (Mu *et al.*, 2008). The development of knowledge-sharing routines produces relationship-specific heuristics that can make the exchange of tacit knowledge easier (Hansen, 1999), which, in turn, enlarges mutual understanding and cooperation, thereby improving the efficiency of knowledge sharing.

Moreover, the network members' investment in routines to coordinate, to adapt and to resolve conflicts among them can help INVs to integrate knowledge from networks into their knowledge base, and to exploit it. Through these routines, INVs will have privileged access to the organizational knowledge that their network partners possess, as well as access to the processes that those partners use to integrate that knowledge and use it either in isolation or jointly in collaboration with their network partners (Bhaumik *et al.*, 2010). Although the conflict between partners is inherent to working together effectively, conflicts need not necessarily undermine performance. Taking a cooperative approach to dealing with conflict promotes the resolution of that conflict for mutual benefit. Cooperative conflict routines strengthen partners' trust and result in innovative solutions promoting INVs' international performance (Wong *et al.*, 2018).

Therefore, the investments of INVs' network partners in shaping routines to share market knowledge, to coordinate, to adapt and to resolve conflicts will contribute to generating idiosyncratic relational assets for the INVs that, in turn, contribute to INVs' international performance. On this basis, the following hypotheses can be proposed:

H1a. The development of market knowledge routines among INVs' network partners positively influences INVs' international performance.

H1b. The development of coordination routines among INVs' network partners positively influences their international performance.

H1c. The development of adaptation routines among INVs' network partners positively influences their international performance.

H1d. The development of conflict management routines among INVs' network partners positively influences their international performance.

2.3 Network entrepreneurial orientation

Wincent *et al.* (2014) extended the EO concept to strategic networks by defining it as collective routines and conditions that capture a collective orientation related to the dimensions of innovation, risk-taking and proactiveness (Miller, 1983, 2011; Rauch *et al.*, 2009). For these authors, network-level innovative orientation refers to the fact that firms in a network share a concern for searching for new business opportunities and for innovating in their products and processes. Network-level risk-taking has to do with boldness in promoting networked firms' experiments in which the outcomes are undetermined. Further, the development of a network entrepreneurial orientation (NEO) means that firms in a network help each other to develop new opportunities, which entail uncertain results. Network-level proactiveness includes daring movements to help networked firms search for new ideas that other companies are not addressing.

Wincent *et al.* (2014) studied NEO in strategic networks in which a planned network goal should be identified. The authors adopted a top-down approach that suggests the importance of the network boards in promoting NEO. However, this perspective is not entirely appropriate when INVs' social networks are considered because neither a network goal nor a network leader can be identified (Nummela *et al.*, 2014; Sarasvathy *et al.*, 2014). INVs' networks are not usually under the control of any individual firm. They are self-organizing systems in which order rises in a bottom-up manner from the local interactions that take place among firms in the network (Wilkinson and Young, 2002). In this situation, a bottom-up approach to viewing NEO is more appropriate and also more coherent with effectual ideas (Sarasvathy *et al.*, 2014) because there is no single person or entity responsible for the networking activity, in addition to being more network-centric. A bottom-up perspective recommends studying NEO through the EO of the networked members. Firms committed to EO are more active in networking activities and are more prone to invest in them (Walter *et al.*, 2006). EO is a relevant orientation that can contribute to "proximity among networked firms" because it generates relationship-specific heuristics that increase mutual involvement in networking (Mu *et al.*, 2008). From this point of view, for companies in entrepreneurial-oriented networks, it is easier to engage in routines to exchange market knowledge, to carry out adaptation, to coordinate and to solve conflicts with their partners, as they share the same business view. In entrepreneurial-oriented networks, it is easier for firms to shape their networks and to find appropriate channels of market knowledge sharing to update their entrepreneurial opportunities. Proximity by NEO enlarges mutual understanding and cooperation and increases firms' willingness to invest in routines to facilitate market knowledge sharing, coordination, adaptation and conflict resolution. Additionally, although networking with partners with whom a common

orientation is shared can reduce opportunism and conflict, conflicts between partners will appear as they have different individual interests. NEO, as a common orientation, can help networked firms to invest in social routines to deal with conflicts. In turn, it will promote resolution for mutual benefit as it strengthens partners' trust, which results in innovative solutions that enhance the firms' performance (Wong *et al.*, 2018). Therefore, it can be proposed that:

H2a. EO at the network level positively influences the development of market knowledge routines.

H2b. EO at the network level positively influences the development of network coordination routines.

H2c. EO at the network level positively influences the development of network adaptation routines.

H2d. EO at the network level positively influences the development of network conflict resolution routines.

3. Methodology

3.1 Study context

Data were gathered from a sample of Spanish INVs pertaining to a network and operating in several industries. For the purposes of this research, a network is taken to be a relationship among at least three independent domestic or foreign companies not necessarily fixed by any legal arrangement. In its minimum form, Company A has relationships with Companies B and C, knows that B and C have relationships with each other and B and C each know that the other has a relationship with A. This definition, which coincides with Ford and Håkansson's (2013) more recent definition of the simplest possible business network, was used as a filter among managers of INVs from the 2010 Dun and Bradstreet Database. Those managers that did not identify their firms as an A firm were removed from the sample.

We used three criteria to select INVs. Firstly, following previous research (Oviatt and McDougall, 1994), a threshold of four years was established to consider a venture as new. Secondly, the international activities of the firms should represent more than 25% of their annual sales (Oviatt and McDougall, 1994). Finally, firms should be independently owned and operated. This process gave a total population of 2019 INVs.

3.2 Data collection

Assuming the intrinsic overlap that exists between the entrepreneur's network and the new venture's network (Hite and Hesterly, 2001; Hoang and Antoncic, 2003; Slotte-Kock and Coviello, 2010), research questionnaires are usually administered to the entrepreneur with the aim of "measuring" networking routines (Jack, 2010). The fact that NEO is approached in a bottom-up manner suggests that subjective observations by a single member can capture the level of the EO of the networked members.

Accordingly, the questionnaire was pre-tested in a convenience sample of 10 entrepreneurs, who suggested small changes to the wording of several items. Potential respondents were contacted by phone to request their collaboration by answering the questionnaire posted on the internet. At the same time, they were asked to confirm their e-mail address, and shortly afterwards an e-mail containing a link to the questionnaire was sent to each general manager. Respondents were asked to refer their answers to what they considered as their main social network that is their main set of firms with which they have

direct, personal and informal relationships (Hite and Hesterly, 2001). The field research took place during the second quarter of 2010 and the final sample, after three reminders, consisted of 189 INVs that answered the questionnaire, which represents a response rate of 9.39% and a confidence interval of 6.75 when considering the total population of Spanish INVs. Table 1 summarizes the main characteristics of the sample.

3.3 Measuring instruments

EO at network level. We conceptualized NEO by adapting Jantunen *et al.*'s (2008) EO scale to the network environment. The resulting scale retained the base of the scales from Miller and Friesen (1982). The items were changed on the basis of our theoretical understanding and the suggestions from the pre-test. The scale included nine items addressing network entrepreneurial behaviours assessed on a five-point Likert scale.

Market knowledge sharing, coordination, adaptation and conflict resolution routines were measured using an adaptation of the scale by Helfert *et al.* (2002) that highlights the firms' engagement in these routines. Interviewees evaluated how the activity described in each item was performed by the members of their social network.

International performance. Perceived quantitative performance measures and subjective measures of managers' satisfaction with the firm's international performance were used. Subjective measures collect firms' objectives other than financial ones (Gerschewski and Xiao, 2015). Subjective performance measures were used because some researchers (Gerschewski and Xiao, 2015) have found that objective performance measures correlate well with subjective ones; consequently, little information is missed by using subjective performance measures. Managing directors have been used in previous studies to collect data on the overall performance of entrepreneurial firms and have been identified as reliable sources of information (Brush and Vanderwerf, 1992). Seven items were used to measure firms' international performance through a Likert scale from 1 to 5 (5 being the highest level), namely, sales volume, market share, profitability, market access, image development, know-how development and general performance.

Control variables. We controlled for several firms and industry factors such as age, size, firm international experience and industry. Previous research has shown that these factors can affect the resources available, the internationalizing processes and international performance of INVs (Shrader and Simon, 1997; Zahra *et al.*, 2000).

Table 2 shows the means, standard deviations and partial correlation coefficients of the constructs and Appendix contains the items of each scale.

Economic sector	Agriculture, forestry and fishing = 9%
	Manufacturing = 45.5%
	Wholesale and retailing = 38%
	Professional, scientific and technical activities = 3%
	Other = 4.5%
Age	One year = 0.5%
	Two years = 14.5%
	Three years = 32.5%
	Four years = 52.5%
Employees	3–15 = 55.5%
	16–55 = 35.5%
	More than 55 = 9%

Table 1.
Characteristics of the sample

Table 2.
Means, standard deviations and partial correlation coefficients

Items	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 NEO1	1														
2 NEO2	0.417**	1													
3 NEO3	0.330**	0.361**	1												
4 NEO4	0.152*	0.316**	0.391**	1											
5 NEO5	0.418**	0.340**	0.587**	0.418**	1										
6 NEO6	0.362**	0.388**	0.516**	0.532**	0.589**	1									
7 NEO7	0.317**	0.421**	0.486**	0.499**	0.525**	0.664**	1								
8 NEO8	0.335**	0.516**	0.454**	0.388**	0.366**	0.521**	0.522**	1							
9 NEO9	0.265**	0.349**	0.468**	0.480**	0.429**	0.635**	0.557**	0.590**	1						
10 MKS1	0.212**	0.222**	0.357**	0.352**	0.392**	0.420**	0.419**	0.370**	0.450**	1					
11 MKS2	0.211**	0.181*	0.420**	0.345**	0.424**	0.471**	0.440**	0.331**	0.361**	0.717**	1				
12 MKS3	−0.084	0.214**	0.000	0.110	0.106	0.077	0.221**	0.055	0.079	0.098	0.085	1			
13 MKS4	0.154*	0.331**	0.419**	0.367**	0.404**	0.375**	0.412**	0.409**	0.347**	0.494**	0.497**	0.035	1		
14 COORDI1	0.384**	0.162*	0.358**	0.260**	0.391**	0.388**	0.321**	0.381**	0.289**	0.268**	0.333**	−0.041	0.325**	1	
15 COORD2	0.407**	0.256**	0.472**	0.332**	0.555**	0.471**	0.402**	0.414**	0.373**	0.337**	0.444**	−0.091	0.464**	0.687**	1
16 COORD3	0.373**	0.253**	0.453**	0.349**	0.472**	0.472**	0.419**	0.427**	0.425**	0.417**	0.460**	−0.050	0.480**	0.562**	0.761**
17 ADAPTA1	0.180*	0.278**	0.502**	0.412**	0.442**	0.572**	0.561**	0.375**	0.489**	0.552**	0.539**	0.155*	0.423**	0.364**	0.466**
18 ADAPTA2	0.169*	0.149*	0.471**	0.282**	0.530**	0.478**	0.422**	0.266**	0.418**	0.599**	0.647**	0.082	0.453**	0.339**	0.415**
19 CONFLIC1	0.172*	0.291**	0.382**	0.397**	0.385**	0.510**	0.509**	0.446**	0.496**	0.521**	0.557**	0.123	0.494**	0.328**	0.465**
20 CONFLIC2	0.067	0.128	0.235**	0.268**	0.298**	0.371**	0.327**	0.260**	0.355**	0.385**	0.388**	0.177*	0.364**	0.218**	0.287**
21 CONFLIC3	0.242**	0.283**	0.405**	0.330**	0.507**	0.438**	0.471**	0.435**	0.425**	0.521**	0.543**	0.114	0.522**	0.360**	0.463**
22 SALES	0.200**	0.318**	0.300**	0.143*	0.398**	0.221**	0.180*	0.128	0.186**	0.210**	0.177*	−0.016	0.146*	0.232**	0.300**
23 SHARE	0.327**	0.230**	0.321**	0.101	0.345**	0.228**	0.124	0.190**	0.222**	0.214**	0.181*	−0.092	0.203**	0.311**	0.404**
24 PROFITA	0.244**	0.221**	0.251**	0.134	0.323**	0.236**	0.166*	0.210**	0.171*	0.191**	0.187**	−0.097	0.236**	0.291**	0.340**
25 ACCESS	0.283**	0.323**	0.271**	0.039	0.306**	0.207**	0.079	0.255**	0.055	0.114	0.070	−0.032	0.217**	0.338**	0.351**
26 IMAGE	0.321**	0.147*	0.312**	0.027	0.343**	0.190**	0.131	0.144*	0.096	0.125	0.119	−0.125	0.165*	0.349**	0.406**
27 KNOWHOW	0.362**	0.187**	0.291**	0.005	0.316**	0.144*	0.083	0.180*	0.096	0.058	0.091	−0.142*	0.128	0.364**	0.371**
28 SATISFAC	0.250**	0.257**	0.312**	0.115	0.347**	0.274**	0.179*	0.211**	0.162*	0.166*	0.202**	−0.110	0.219**	0.359**	0.420**
MEAN	3.19	3.21	3.82	3.28	3.69	3.88	3.79	3.17	3.34	4.14	4.41	1.76	4.01	3.54	3.72
SD	1.063	0.910	0.802	1.012	0.836	0.951	0.970	0.843	0.968	0.912	0.731	0.883	0.723	0.769	0.683

Notes: ** $p < 0.01$, * $p < 0.05$

(*continued*)

Items	16	17	18	19	20	21	22	23	24	25	26	27	28
1 NEO1													
2 NEO2													
3 NEO3													
4 NEO4													
5 NEO5													
6 NEO6													
7 NEO7													
8 NEO8													
9 NEO9													
10 MKS1													
11 MKS2													
12 MKS3													
13 MKS4													
14 COORDI1													
15 COORD2													
16 COORD3	1												
17 ADAPTA1	0.485**	1											
18 ADAPTA2	0.426**	0.716**	1										
19 CONFLIC1	0.579**	0.461**	0.430**	1									
20 CONFLIC2	0.366**	0.315**	0.325**	0.641**	1								
21 CONFLIC3	0.536**	0.423**	0.458**	0.750**	0.656**	1							
22 SALES	0.245**	0.294**	0.303**	0.164*	0.137	0.174*	1						
23 SHARE	0.401**	0.210**	0.250**	0.215**	0.143*	0.273**	0.658**	1					
24 PROFITA	0.289**	0.162*	0.259**	0.158*	0.139	0.200**	0.568**	0.589**	1				
25 ACCESS	0.287**	0.104	0.111	0.143*	0.161*	0.233**	0.502**	0.541**	0.662**	1			
26 IMAGE	0.335**	0.175*	0.187**	0.131	0.108	0.210**	0.451**	0.599**	0.524**	0.617**	1		
27 KNOWHOW	0.282**	0.101	0.109	0.076	0.128	0.201**	0.429**	0.531**	0.560**	0.690**	0.797**	1	
28 SATISFAC	0.386**	0.229**	0.254**	0.202**	0.216**	0.280**	0.611**	0.575**	0.701**	0.710**	0.643**	0.734**	1
MEAN	3.68	4.01	4.27	3.78	3.51	3.79	3.38	3.21	3.42	3.31	3.44	3.48	3.61
SD	0.762	0.888	0.836	0.751	0.763	0.684	0.916	0.911	0.858	0.909	0.889	0.874	0.850

Table 2.

3.4 Control analysis

Following Podsakoff *et al.* (2003), several procedures were used to control for common method bias. Respondents were assured they would remain completely anonymous and, additionally, they were told that there were no right or wrong answers. Instead, they were asked to answer as honestly as possible. Different response formats were used, including open questions and Likert scales. Specifically, control variables were openly questioned so that age was measured as the difference between the firm's year of foundation and the year of the fieldwork, size was operationalized as the number of employees, firm's international experience was taken as the number of years since the first exporting activity, and industry type was grouped in seven categories according to the results of descriptive analyses, namely, agriculture, forestry or fishing, manufacturing, wholesale or retailing, professional, scientific or technical activities and other. Regarding statistical measures, we conducted Harman's (1967) single factor test. Unrotated factor analysis extracted five significant factors with eigenvalues greater than one, which explained 65.31% of the variance (36.30%, 3.89%, 1.61%, 1.38% and 1.25%). We also used a marker variable that is theoretically uncorrelated to at least one variable in the conceptual model. For this purpose, we used the percentage of production in foreign markets as the marker variable. We found the lowest correlation of the marker variable to the focal construct items to be -0.107 ($p > 0.95$), which represents the upper bound for a potential common method variance. According to these results, the influence of common method variance can be ruled out.

The responses of early and late respondents were compared to test for non-response bias. Each data set was divided into thirds according to the number of days from initial e-mailing until reception of the completed questionnaire. Analysis of the *t*-tests between the first and the last thirds showed no significant differences ($p < 0.05$ level), thus indicating an absence of non-response bias (Armstrong and Overton, 1977).

An structural equation modeling analysis was conducted using firm economic sector, age, size and international experience as independent variables to check their effects on the dependent variables of the model (network management activities and international performance). Results of the analysis showed no significant relationship between any of the control variables and the model variables, thereby indicating that they had no effect on the variables studied (Table 3).

3.5 Scale validity and reliability

Confirmatory analysis is commonly used to evaluate the convergent validity of reflective measures. Item MKS3 was eliminated from the market knowledge share scale because it did not reach a lambda of 0.5. The rest of the items showed all parameters as having a high lambda, all *t*-values were significant at $p < 0.001$ and fit indices were good. Additionally, most of the scales presented good reliability indices with the exception of the variance extracted for the constructs innovation and market knowledge sharing.

The discriminant validity of the scales was tested with the confidence interval (Anderson and Gerbing, 1988) and the extracted variance (Fornell and Larcker, 1981). The results of these tests were satisfactory in all cases (Table 4).

3.6 Results and discussion

The structural relations between constructs were examined with SEM using the maximum likelihood estimation procedure in LISREL. To simplify the models, the NEO measurement scale was narrowed down to three indicators, corresponding to each dimension, by averaging the items in each dimension.

Relation	λ	t
Industry – market knowledge sharing routines	−0.74	−0.73
Industry – routines to coordinate	−0.61	−0.73
Industry – routines to adapt	−0.04	−0.66
Industry – conflict resolution routines	−0.89	−0.75
Industry – international performance	−0.57	−0.67
Age – market knowledge sharing routines	0.75	0.73
Age – routines to coordinate	0.44	0.81
Age – routines to adapt	0.92	0.77
Age – conflict resolution routines	0.63	0.75
Age – international performance	0.47	0.86
Size – market knowledge sharing routines	−0.30	−0.75
Size – routines to coordinate	−0.30	−0.69
Size – routines to adapt	−0.34	−0.75
Size – conflict resolution routines	−0.88	−0.74
Size – international performance	−0.83	−0.65
International activity – market knowledge sharing routines	0.01	0.68
International activity – routines to coordinate	0.80	1.04
International activity – routines to adapt	0.72	0.74
International activity – conflict resolution routines	0.55	0.77
International activity – international performance	0.76	1.14

Goodness-of-fit statistics

χ^2/df	RMSR	GFI	NFI	CFI	IFI
2.32	0.066	0.88	0.94	0.96	0.96

Table 3.
Control analyses

The parameters showed positive effects of NEO on the four network activities, although only network coordination activities exhibited a positive effect on international performance (Figure 1).

This paper has addressed the networked firms' investments in developing routines that facilitate market knowledge sharing, coordination, adaptation and social conflict resolution among them. Network management activities have then been approached through the networked firms' commitment to developing the aforementioned routines. Additionally, we have proposed NEO as an enhancing factor influencing network management activities. We have elaborated our theoretical model on the basis that relational investments are embedded in social arrangements and that those investments contribute to generating relational idiosyncratic assets for the firms, which, in turn, influence their performance.

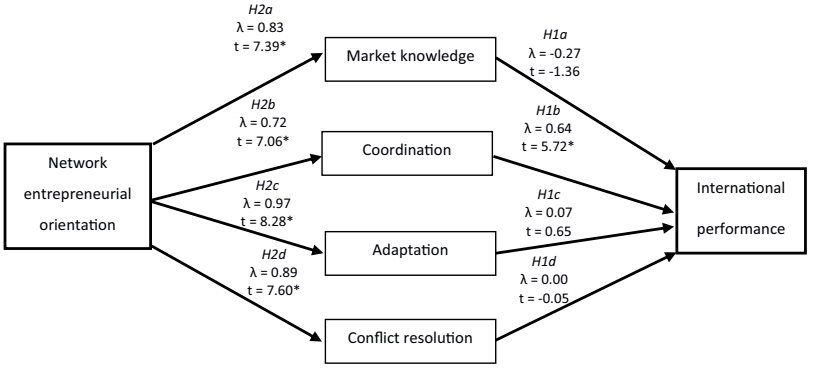
Surprisingly, the effects of the network routines that have been studied on INVs' international performance are only significant when they are directed towards facilitating coordination among the networked firms. For INVs, these network routines can help them to improve their international performance and their capacity to enlarge INVs' knowledge base and its application. In this sense, our results support the idea that investment in routines to promote coordination among INVs' network members plays a key role in determining the benefits that can be extracted from the firms in a network (Galkina and Chetty, 2015). These results should be in line with recent ideas pinpointing the need to introduce more nuances in the study of INVs' networking behaviour. For example, Prashantham *et al.* (2019) propose effectuation to be effective when studying international entry speed and the speed of geographical scope, but causation when the variable to be explained is the speed of international commitment.

Table 4.
Validity and reliability analyses of network agency scales

NEO						
Validity analysis			First-order			Second-order
		Innovation	Proactiveness		Risk-taking	NEO
Parameters		0.50–0.70	0.66–0.90		0.72–0.81	0.92–0.99
Significant loads					All $t > 3.29$	
Reliability analysis			First-order			Second-order
		Innovation	Proactiveness		Risk-taking	NEO
α		0.63	0.76		0.79	–
Composed reliability		0.60	0.81		0.80	0.97
Variance extracted		0.35	0.58		0.57	0.93
Goodness-of-fit statistics						
χ^2/df	RMSR	GFI	NFI	NNFI	IFI	CFI
1.64	0.029	0.97	0.98	0.98	0.99	0.99
Validity analysis	Market knowledge sharing		Coordination	Adaptation	Conflict	International performance
Parameters	0.62–0.67		0.68–0.90	0.78–0.99	0.66–0.99	0.60–0.91
Significant loads					All $t > 3.29$	
Reliability analysis	Market knowledge sharing		Coordination	Adaptation	Conflict	International performance
α	0.79		0.85	0.83	0.86	0.91
Composed reliability	0.68		0.86	0.89	0.92	0.93
Variance extracted	0.42		0.69	0.81	0.80	0.66
				Goodness-of-fit statistics		
χ^2/df	RMSR	GFI	NFI	NNFI	IFI	CFI
1.63	0.054	0.92	0.97	0.98	0.99	0.99

The variables used to measure international performance – sales volume, market share, profitability, market access, image development, know-how development and general performance – are developed in the context of the early international entry, and they are, therefore, associated with international entry speed. More specific measures of international performance associated with the speed of geographical scope and of market commitment should be taken into account to uncover the influence of networking from a behavioural perspective (Prashantham *et al.*, 2019).

These results contribute to both network theory and entrepreneurship theory with a new conceptualization of entrepreneurial networking inspired by effectuation (Sarasvathy and Dew, 2013; Galkina and Chetty, 2015) that not only stipulates that volition to the network will increase networked firms' performance (Jones *et al.*, 2011) but rather the value of collective engagement in network management activities. We, therefore, propose that management in networks should be seen from a more networked perspective and thereby aim to rekindle interest in the socially embedded nature of networking (Enge *et al.*, 2017). Put simply, by taking network partners' commitment to developing routines that are to be coordinated among them, we shed light on an overlooked but extremely relevant part of how synergic value in networking is presented (Porter and Woo, 2015). In two recent papers charting a research agenda on international entrepreneurship and networks, Bembom and Schwens (2018) or Prashantham *et al.* (2019) noted the need to explore additional social relational mechanisms as a central issue to be addressed by developing an empirical and theoretical understanding that highlights volition in networks. Unlike existing contributions to this emerging stream of research, which adopted social capital arguments and highlighted trust and goodwill (Anderson *et al.*, 2007; Casson and Giusta, 2007), we open a completely new angle on entrepreneurial networking by assuming that networks are socially co-constructed (Sarasvathy *et al.*, 2014; Galkina and Chetty, 2015). We, therefore, both challenge and complement the prevailing view on networking and believe that, by doing so, entrepreneurial network research can be greatly improved.



Goodness-of-fit statistics					
χ^2/df	RMSR	GFI	NFI	CFI	IFI
1.52	0.065	0.90	0.96	0.98	0.98

Note: *$p < 0.001$

Figure 1.
Path model of the relationship between network entrepreneurial orientation, network management activities and international new ventures' international performance

By analysing the importance of the firms' volition to network and to leverage routines facilitating coordination among them, we position effectuation (Sarasvathy, 2001) as theoretically insightful to the study of networking activity, at least in the INVs' entry phase. Because attention to networking continues to be a driving force of novel research across international entrepreneurship literature (Bembom and Schwens, 2018), we are confident that it can also add much value to studies on how entrepreneurs co-shape their social networks. Indeed, the need to start research in networking with more "empirically realistic assumptions" has recently been noted (Enge *et al.*, 2017, p. 47).

The results also support the assumption that the influence of NEO on network management activities is high and very significant. Therefore, *H2a–H2d* are confirmed. These results point out the need to consider the strategic orientation of networked members when analysing network management activities (Bliemel *et al.*, 2014). These results are interesting and extend existing international entrepreneurship research in several avenues. Firstly, entrepreneurial network scholars have shown that the capability of networks to provide network resources depends on their structural characteristics (Jones *et al.*, 2011; Vissa and Bhagavatula, 2012). Nevertheless, international entrepreneurship research provides no conclusions on the type of ties and network structural characteristics associated with improved levels of performance (Slotte-Kock and Coviello, 2010) and, consequently, networks with strong ties and with structural holes have been both highlighted (Oviatt and McDougall, 2005). This paper has gone beyond the strong–weak tie dichotomy and has focused on EO. Therefore, our results extend past research by uncovering network management activities taking place in entrepreneurial-oriented networks. Accordingly, our results suggest that, in entrepreneurial-oriented networks, firms are prone to be involved in market knowledge sharing, coordination, adaptation and conflict resolution routines without the guarantees that are present in formal or strategic networks. In this sense, these results seem to suggest that entrepreneurial-oriented firms are more prone to be involved in effectual processes, in particular in networking effectual processes.

Studying EO at the network level provides an opportunity to broaden the study domain. This research has demonstrated that EO can be applied not only at the firm level but also at the network level. These results extend Wincent *et al.* (2014), research by examining NEO in INVs' networks in which informal ties prevail; in fact, Wincent *et al.* (2014) research concludes that NEO is an important network characteristic in strategic/formal networks and that the network leader plays a key role in promoting it. The current study adds to Wincent *et al.*'s (2014) research by considering that, in INVs' networks, the networked firms are the crucial ones to determine the levels of NEO and that NEO emerges bottom-up from individual orientations. Therefore, the conceptualization of NEO in this paper is more network-centric than the one carried out by Wincent *et al.* (2014). For these authors, NEO is the materialization of the network board's EO. While recognizing the influence of the board in determining the strategy of strategic networks, the role of the networked members cannot be neglected, especially in networks in which there is no leader. Moreover, although we followed careful procedures when testing EO measures at a meso-level, we welcome further scale development.

4. Conclusions

The present study shows that the development of an EO at the network level (NEO) can be considered an important antecedent in determining the firms' involvement in

network routines without the existence of a planned goal or any formal safeguards. Moreover, only involvement in coordination routines among the firms in a network seems to have an effect on INVs' international performance.

There are several implications for practice. Our results may provide guidance for building INVs' networks. Although INVs have to network with all partners who are willing to collaborate with them (Galkina and Chetty, 2015), entrepreneurs need to have orientations about which partners could be more valuable to them (Rosa, 2013). The results of this research show the suitability of entrepreneurial-oriented partners.

The present study offers novel insights but focuses on a narrow sample of Spanish firms. The reason for using such a sample is based on the availability of information with which to obtain a sample that is large enough to test our hypotheses, a procedure relatively common in the literature. Additionally, we used single subjective observations about networks; hence, it can be said that what we are capturing is the general manager's perception of the inter-firm network activities. Moreover, the fieldwork was carried out in 2010. Although networking routines are long-term activities, we cannot dismiss the possibility of the existence of changes due to the time that has elapsed. Consequently, more recent studies analysing the network activities of each network member should be carried out in spite of the difficulty and the considerable resources required to conduct research with these characteristics.

On the other hand, cultural and environmental factors affecting activities inside the networks cannot be ruled out. Extrapolation to other kinds of firms should also be approached with care. In line with studying EO-performance relationships in other contexts, we could expect numerous contingency factors that might moderate or mediate the influences studied here. Additionally, the relational activities studied support each other. For example, a high degree of coordination should enable market knowledge and adaptation between partners, and high levels of coordination and adaptation should increase conflict resolution. Nevertheless, these interactions between activities have not been analysed in our model.

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Further reading

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Appendix

Measurement scales

Entrepreneurial orientation at network level (Jantunen et al., 2008)

The firms in my main network . . .

- NEO1. . . . start implementing innovative production processes.
- NEO2. . . . support projects that are expected to generate higher profits while assuming the risks involved.
- NEO3. . . . adopt the best work methods in the sector.
- NEO4. . . . apply new practices developed in other sectors.
- NEO5. . . . quickly identify technological changes that may affect them.
- NEO6. . . . are able to exploit new opportunities.
- NEO7. . . . are continually looking for new ways of working.
- NEO8. . . . prefer, in situations of uncertainty, to take risks to ensure that market opportunities are exploited.
- NEO9. . . . allocate resources to promising new areas of operation.

Market knowledge sharing (Helfert et al., 2002)

The firms in my main network . . .

- MKS1. . . . count on their customers to understand their specific needs.
- MKS2. . . . act quickly if customers have a problem with a product or service.
- MKS3. . . . talk to their partners' employees about personal issues.
- MKS4. . . . jointly develop solutions for customers.

Coordination (Helfert et al., 2002)

The firms in my main network . . .

- COO1. . . . discuss the tasks to be carried out by each of the members.
- COO2. . . . check that the promises made by each of them are fulfilled.
- COO3. . . . discuss the steps to be followed to achieve the objectives of the network.

Adaptation (Helfert et al., 2002)

The firms in my main network . . .

- ADA1. . . . adapt the offer to the customers' needs.
- ADA2. . . . adapt the distribution of products to their customers' demands.

Conflict resolution routines (Helfert et al., 2002)

The firms in my main network . . .

- CON1. . . . have our company's best interests at heart when conflicts arise.
- CON2. . . . when there is a conflict, they are patient enough to wait for the situation to calm down.
- CON3. . . . attempt to establish a compromise that is acceptable to all parties when a conflict arises.

International performance

Please indicate, as regard the past three years, how satisfied you are with the following aspects of your international activity:

- Turnover.
- Market share.
- Profitability.
- Market access.
- Image development.
- Development of know-how.
- Overall satisfaction.

Corresponding author

Andreu Blesa can be contacted at: blesa@uji.es